DOCUMENT RESUME

ED 137 920 EA 009 394

TITLE	Alaskan Interregional Cost Differentials. An Examination of Costs of Living, Public School Foundation Program Instructional Unit Allotments, and School Operations Costs in Alaska.
INSTITUTION	Alaska Univ., Fairbanks. Center for Northern Educational Research.; Alaska Univ., Fairbanks. Inst. of Social, Economic, and Government Research.
PUB DATE	Mar 77
NOTE	180p.; Some tables may reproduce poorly due to small print size
EDRS PRICE	MF-$0.83 HC-$10.03 Plus Postage.
DESCRIPTORS	*Cost Indexes; Costs; *Educational Finance; Elementary Secondary Education; *Expenditures; *Foundation Programs; State Aid; State School District Relationship; *Tables (Data)
IDENTIFIERS	*Alaska

ABSTRACT

The primary purpose of this study is to examine the relationship between the cost-of-living allowance used in the Alaska Public School Foundation Program (PSFP) to the actual cost of providing educational services in different regions of the state. The focus of this examination is on "instructional unit allotments," the factor in the PSFP that adjusts for different costs in different areas of the state. However, the study also raises questions about other features of the PSFP, most notably the definition of basic need and the relationship of a needed cost-of-education index to this definition. Chapter 1 presents a short history of instructional unit allotments in the foundation program; chapter 2 compares instructional unit allotments with available Alaskan interregional cost-of-living indices; chapter 3 compares instructional unit allotments and the cost of living with actual expenditures for education; and chapter 4 summarizes findings and conclusions from the study. (Author/JG)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED137920

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Alaskan Interregional Cost Differentials

An Examination of Costs of Living, Public School Foundation Program Instructional Unit Allotments, and School Operations Costs in Alaska

Prepared by
Institute of Social and Economic Research
in cooperation with the
Alaska School Finance Study Staff

BEST COPY AVAILABLE

A Project of the Alaska School Finance Study

Center for Northern Educational Research
University of Alaska-Fairbanks
March 1977

2

EA 009 394

Foreword

"In Alaska, the greatest obstacle to equal educational opportunity may exist because of inter-system variations and inter-region variations." (School Finance in Alaska Report No. 1: An Overview of Current Issues, Sources, and Distribution of Funds for Public Elementary and Secondary Education, p. viii.)

The need to reduce or eliminate the inter-region variations among school districts is recognized in the Public School Foundation Program (PSFP) since it contains a provision whereby school districts in rural and isolated areas may qualify for additional funds to meet their higher operating costs. The PSFP factor which makes the adjustment for different costs in different areas of the state is called the instructional unit allotment.

How well the instructional unit allotment achieves its purpose of reducing inter-region variations has been a continuing concern to all persons and agencies responsible for equitable funding of education programs in Alaska's public schools. This concern became more intense during the past year due largely to the formation of 21 Regional Education Attendance Areas whose 1976-77 state aid would be affected by the instructional unit allotment. City and borough districts were equally concerned about the validity of the instructional unit allotments. (See Exhibit 1, page xii, for a map which shows how the instructional unit allotments are applied across the state.)

Because of these concerns, the Department of Education asked the staff of the Alaska School Finance Study at the Center for Northern Educational Research (CNER) to move its planned examination of the instructional unit allotments ahead several months. In this way, results of the examination would be available in time for administration and legislative consideration of statutory changes in the PSFP if changes were indicated. Because of the limited time available, and because an analysis of cost of living indices in Alaska was required, CNER enlisted the aid of the Institute of Social and Economic Research (ISER). The cooperatively-developed research design called for an examination of relationships among (1) the cost of living, (2) instructional unit allotments, and (3) school operation costs in Alaska. This report is a result of that examination.

The primary author of this report was Michael J. Scott, assistant professor of economics at ISER. Lee Gorsuch, ISER director, wrote the introduction. Many others assisted in this project (see Acknowledgements) by providing related information and data and by reviewing early drafts.

Although the subject of this report is generally limited to the instructional unit allotments, it also raises questions about other features of the Public School Foundation Program, most notably the definition of basic need, and the relationship of a needed cost of

education index to this definition. The many additional lines of inquiry suggested by this report also lend credibility to the importance of the Alaska School Finance Study, and to the issues raised in Report No. 1 of the study.

Alaska's public school students deserve an education second to none in the nation. It is hoped that this report will make a modest contribution toward that goal.

E. Dean Coon
Assistant Director
Center for Northern
Educational Research

ACKNOWLEDGEMENTS

A great many persons and agencies provided data or background information for this publication. These included Ms. Christy Miller, Alaska Automobile Association, Anchorage; Mr. Bruce Carr, State Division of Personnel and Labor Relations, Juneau; Ms. Joan Ray, State Division of Energy and Power Development (formerly, Alaska Energy Office), Anchorage; Mr. Peter Eckland, State Department of Highways, Juneau; Mr. Tom Curry, Blue Cross Washington-Alaska, Seattle; Mr. Donald Fridley, Anchorage; Dr. Donald M. Dafoe, University of Alaska, Retired; Mr. David Jollie, Bureau of Indian Affairs, Seattle; Mr. Ferguson, Standard Oil of California, Anchorage; Ms. Susan Sullivan, Anchorage; the staff of HUD, Anchorage, especially Mr. Al Robinson; Mr. Bob Olsen, First Federal Savings and Loan, Anchorage.

A number of persons reviewed part or all early drafts of the manuscript and provided editorial suggestions. These included George Rogers, Arlon R. Tussing, and Lee Gorsuch of the Institute of Social and Economic Research; Jerry Waddell, E. Dean Coon, and Anne E. Just of the Center for Northern Educational Research; Jack Penrod, Bill Thomson, and Nat Cole of the Alaska Department of Education; and Tom Foote of Stanford University.

The following persons helped with the research and preparation of

various drafts: Anne Just did much preparatory research and made initial contacts with several sources; Jerry Waddell compiled the basic expenditure data for Chapter Three; Mary Ann Vandecastle did most of the computations and prepared several of the Tables. Typing and proofreading was done by Darla Siver at the Institute of Social and Economic Research and by Ruth Glavinovich and Irma Jean Stichter of the Center for Northern Educational Research.

All of the above are acknowledged with thanks, but this report and its accuracy remain the responsibility of the author.

Michael J. Scott
Institute of Social
and Economic Research

TABLE OF CONTENTS

Chapter		Page
	Foreword	ii
	Acknowledgements	v
	Table of Contents	vii
	List of Tables	ix
	Exhibit 1 - Map of Alaska School Districts and Election Districts	xii
	Introduction	xiii
1	A Short History of Instructional Unit Allotments in the Foundation Program 1	
	Introduction	1
	Pre-Foundation Program	2
	Foundation Program	7
	Summary	19
	Footnotes	21
2	Comparison of the Instructional Unit Allotments with Available Alaskan Interregional Cost of Living Indices	24
	Introduction	24
	Theoretical Problems of Indexing for Costs of Living	25
	Practical Problems of Indexing	29
	Housing	37
	Heating Fuels and Electricity	42
	Transportation	49
	Clothing and Furnishings	56
	Personal and Medical Care	57
	Recreation, Reading, Education and Other Miscellaneous Expenses	60
	Social Security, Disability Payments, and Income Taxes	60
	Family Budgets vs. Instructional Unit Allotments	61
	Indices Prepared by the State Government	68
	Private Pay Differentials	71
	Summary	75
	Footnotes	77

Chapter Page

3 Comparison of the Instructional Unit Allotments and Cost of Living with Actual Expenditures for Education 81
Introduction 81
Expenditures on Education vs. Cost of Education Units 81
Expenditures per ADM vs. Instructional Unit Allotment Index 83
Expenditures per Instructional Unit and Foundation Aid vs. Instructional Unit Allotment Index 88
Local Spending 92
Regular Instruction 96
Plant Operation and Maintainence 100
Plant Operation and Maintainence vs. Regular Instruction and Tax Effort 106
Summary 107
Footnotes 109

4 Summary of Findings and Conclusions 110
Findings: History of Instructional Unit Allotments 112
Findings: Cost of Living 115
Findings: Relative Expenditures and Instructional Unit Allotments 118
Alternative Approaches to Problems Raised 122
Advantages and Disadvantages of Alternatives 125
Conclusion 126

Appendices

A - Supplementary Tables 127
B - Bibliography 137
C - Related Correspondence 146

Tables

No.	Title	Page
1.1	District Schools: Average Expenditures (Less Capital Outlay and Debt Service) per ADM as a Percent of Anchorage	12
1.2	Total Expenditures (Less Capital Outlay and Debt Service)/ADM 1967-68 and 1968-69 School Years	14
1.3	District Schools: Average Expenditures per ADM as a Percent of Anchorage	18
2.1	Major Expenditure Categories in the Annual Budgets for Four Person Families, Anchorage, Autumn, 1975	31
2.2	Alaska Food Price Indices, June-July 1976	33
2.3	Division of Personnel and Labor Relations 1976 Housing Survey Results	40
2.4	Electricity Prices, 500 KWH/Mo. Use, and Fuel Prices	43
2.5	Shelter Cost Index	46
2.6	Alaskan Air Fares and Air Feight Rates, July 1976	51
2.7	Transportation Cost Index, 1976	53
2.8	Air Freight Costs and Household Furnishings and Operations Indices, 1976	58
2.9	Hypothetical Federal and State Income Taxes Paid by Instructional Staff on Average Incomes, 1975-76 Fiscal Year	62
2.10	Constructing the Composite Total Consumption Index for School Districts and REAA's	64

Tables

No.	Title	Page
2.11	Summary of Comparative Cost Indexes Alaska House Districts	69
2.12	Private Company Pay Differentials for Alaskan Locations, January 1977	72
2.13	State Salary Schedule Differentials, General Government Unit, Step A, May 16, 1976	74
3.1	Schedule of Allowable Instructional Units	84
3.2	Expenditures Per ADM vs. Instructional Unit Allotments, 1975-76	86
3.3	Expenditures Per Instructional Unit vs. Instructional Unit Allotments, 1975-76	89
3.4	District Schools: Indices of Expenditures, Foundation Aid, and Local Revenues, 1975-76	93
3.5	Local Revenue Effort, District Schools, 1975-76	95
3.6	Total Expenditures Per Instructional Unit and Regular Expenditures Per Instructional Unit, Compared to Instructional Unit Allotments, 1975-76	97
3.7	Total Expenditures Per Instructional Unit, Regular Instructional Expense Per Instructional Unit, and Average Instructional Salaries, District Schools, 1975-76	101
3.8	Average Instructional Salaries and Certified Salaries Expense Compared to "Cost of Living" indicators, District Schools, 1975-76	102
3.9	Plant Operation and Maintainence Expenses and Operation and Maintainence Employee Salaries and Benefits Compared to Instructional Unit Allotments, 1975-76 School Year	103

Tables

No.	Title	Page
A.1	Detail of Expenditures Per ADM for School Districts and REAA's, 1975-76	129
A.2	Detail of Expenditures Per Instructional Unit for School Districts and REAA's, 1975-76	131
A.3	Detail of Regular Instruction Expenditures Per ADM, 1975-76	133
A.4	Detail of Regular Instruction Expenditures Per Instructional Unit, 1975-76	134
A.5	Detail of Operations and Maintainence Costs Per Instructional Unit, 1975-76	135

Exhibit 1 - Map of Alaska School Districts
and Election Districts

LOCATION OF SCHOOLS AND SCHOOL DISTRICTS IN ALASKA - JULY 1, 1976 & ELECTION DISTRICTS - 1965

BOROUGH AND CITY SCHOOL DISTRICTS

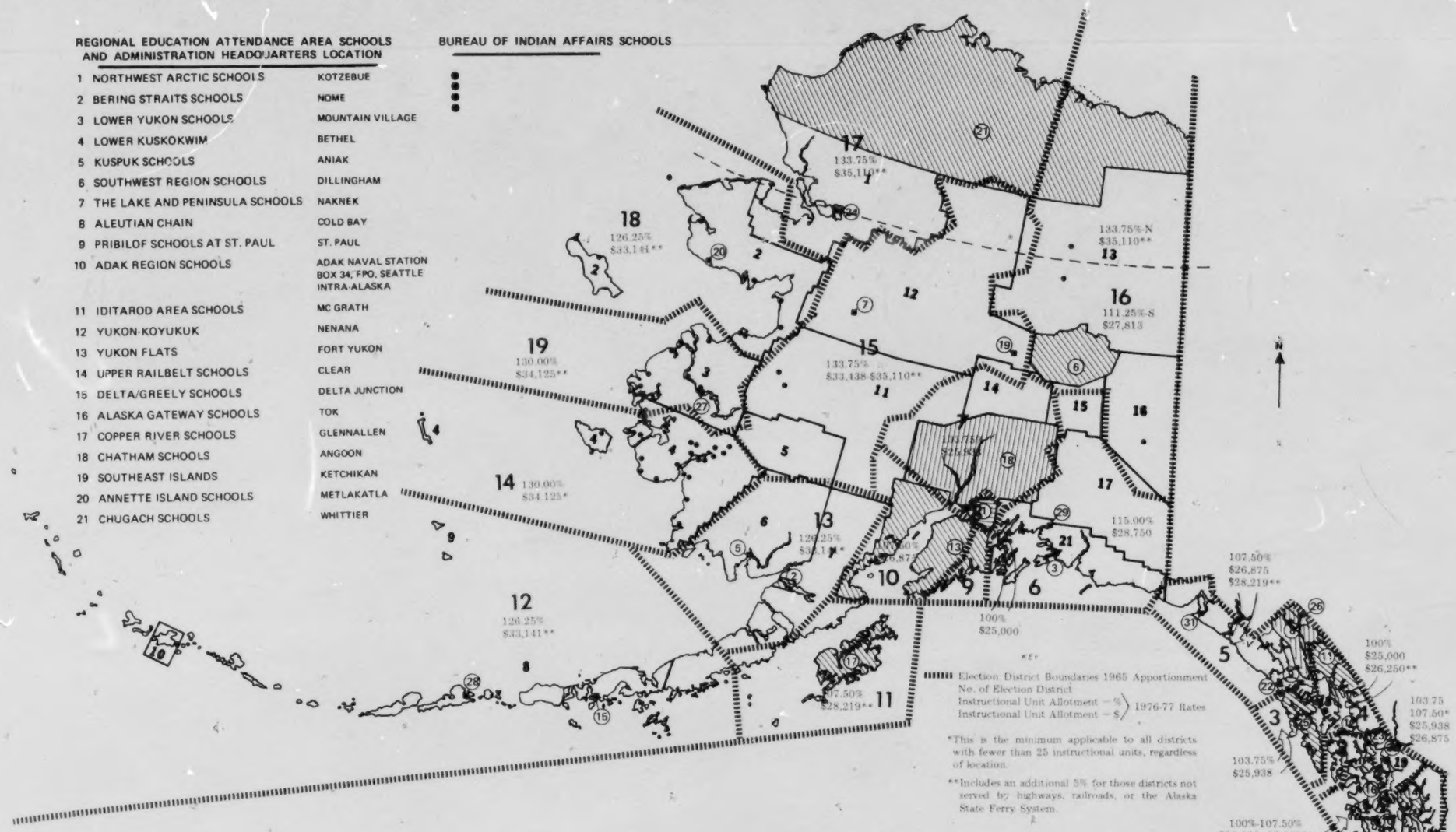
1. ANCHORAGE BOROUGH SCHOOLS
2. BRISTOL BAY BOROUGH SCHOOLS
3. CORDOVA CITY SCHOOLS
4. CRAIG CITY SCHOOLS
5. DILLINGHAM CITY SCHOOLS
6. FAIRBANKS-NORTH STAR BOROUGH SCHOOLS
7. GALENA CITY SCHOOLS
8. HAINES BOROUGH SCHOOLS
9. HOONAH PUBLIC SCHOOLS
10. HYDABURG CITY SCHOOLS
11. GREATER JUNEAU BOROUGH SCHOOLS
12. KAKE CITY SCHOOLS
13. KENAI PENINSULA BOROUGH SCHOOLS
14. KETCHIKAN GATEWAY BOROUGH SCHOOLS
15. KING COVE CITY SCHOOLS
16. KLAWOCK CITY SCHOOLS
17. KODIAK ISLAND BOROUGH SCHOOLS
18. MATANUSKA-SUSITNA BOROUGH SCHOOLS
19. NENANA CITY SCHOOLS
20. NOME CITY SCHOOLS
21. NORTH SLOPE BOROUGH SCHOOLS
22. PELICAN CITY SCHOOLS
23. PETERSBURG CITY SCHOOLS
24. SELAWIK CITY SCHOOLS
25. GREATER SITKA BOROUGH SCHOOLS
26. SKAGWAY CITY SCHOOLS
27. ST. MARY'S PUBLIC SCHOOLS
28. UNALASKA CITY SCHOOLS
29. VALDEZ CITY SCHOOLS
30. WRANGELL CITY SCHOOLS
31. YAKUTAT CITY SCHOOLS

from
School Finance in Alaska
Report No. 1
Center for Northern Educational Research
–1976–

REGIONAL EDUCATION ATTENDANCE AREA SCHOOLS AND ADMINISTRATION HEADQUARTERS LOCATION

1	NORTHWEST ARCTIC SCHOOLS	KOTZEBUE
2	BERING STRAITS SCHOOLS	NOME
3	LOWER YUKON SCHOOLS	MOUNTAIN VILLAGE
4	LOWER KUSKOKWIM	BETHEL
5	KUSPUK SCHOOLS	ANIAK
6	SOUTHWEST REGION SCHOOLS	DILLINGHAM
7	THE LAKE AND PENINSULA SCHOOLS	NAKNEK
8	ALEUTIAN CHAIN	COLD BAY
9	PRIBILOF SCHOOLS AT ST. PAUL	ST. PAUL
10	ADAK REGION SCHOOLS	ADAK NAVAL STATION BOX 34, FPO, SEATTLE INTRA-ALASKA
11	IDITAROD AREA SCHOOLS	MC GRATH
12	YUKON-KOYUKUK	NENANA
13	YUKON FLATS	FORT YUKON
14	UPPER RAILBELT SCHOOLS	CLEAR
15	DELTA/GREELY SCHOOLS	DELTA JUNCTION
16	ALASKA GATEWAY SCHOOLS	TOK
17	COPPER RIVER SCHOOLS	GLENNALLEN
18	CHATHAM SCHOOLS	ANGOON
19	SOUTHEAST ISLANDS	KETCHIKAN
20	ANNETTE ISLAND SCHOOLS	METLAKATLA
21	CHUGACH SCHOOLS	WHITTIER

BUREAU OF INDIAN AFFAIRS SCHOOLS



INTRODUCTION

It is generally accepted that it costs more to live in Alaska than elsewhere in the United States. For those who live in Alaska, it is no news that the costs of living in the state have increased substantially over the past several years, and not necessarily in any fixed proportion to what it would cost one to live in other areas of the nation. Similarly, the cost for one to live a particular lifestyle in different areas of Alaska also varies. Indeed, based on the evidence available, the "cost of living" differences within Alaska are greater than the differences between Alaska and the lower forty-eight states.

Both the federal and state governments recognize this "cost of living" disparity and, consequently, propose various policies and guidelines to adjust programs and salaries accordingly. Because the effects of high inflation experienced by both the state and nation in recent years are unevenly distributed, it seems appropriate for the government to periodically assess, if not continually monitor, changes occurring in the cost of living.

The United States Government does monitor changes in the "cost of living" throughout the nation through the use of a Consumer Price Index, (CPI), updated monthly by the U.S. Department of Labor, Bureau of Labor Statistics. Changes in the CPI for major cities of the

United States are reported quarterly and intercity cost comparisons are made annually. Unfortunately, for Alaska, only one city, Anchorage, is currently included as a CPI reporting unit.

In the absence of having other national measures to discern cost of living differences among Alaska's cities and regions, various state agencies have constructed and use various "cost of living" indicators. One such agency is the Alaska Department of Education, which inherited from Territorial days a percentage allocation formula for distributing state school funds that recognizes regional cost of living differences. This feature has been continued, although modified, and exists today as the Instructional Unit Allotment in the Public School Foundation Program.

Although the following report constructs a "cost of living" (or consumption) index and compares it to other "cost of living" measures or allowances presently used by the state, the primary focus of the study is to examine the relationship of the "cost of living" allowances used in the Alaska School Foundation Program to the actual cost of providing educational services. Despite the primary purpose of the study, many readers may inadvertently misuse the index and overlook the central thesis of the study, primarily because of the confusion which exists between "cost of living" differences and cost differences. Underlying the confusion is a pervasive misunderstanding of what a "cost of living" index is,

and a lack of appreciation of how it can be appropriately used. We hope a brief introduction to the cost of living concept can clarify any initial misconceptions and place the following report in its proper context.

A "cost of living" index measures the relative costs for an average family to live in various localities. A detailed budget is prepared for an average family. The budget reflects how the family spends its income, i.e., what proportion of the income is spent on what items. Once the budget is prepared, specific localities are selected to determine how much it would cost to purchase the same budget items in each locality.

The budget, or the primary categories of goods on which the hypothetical family spends its income, remains unchanged between places. Thus, the index measures relative prices for the same "bundle of goods." It does not measure how much it actually costs people who live in the different localities to live there because each family may spend their incomes differently. In such instances, a family's "cost of living" depends on how they spend their income.

Cost of living indices, as they are generally constructed, require a standard budget of a typical family reflecting a single lifestyle. It is probably impossible to construct one index which accounts for Alaska's cultural and lifestyle diversity. Indexing

simply requires a standard unit and anyone who uses an index must be fully aware that the index homogenizes any diversity, cultural or otherwise, into a standardized average.

Given the above explanation, if there is any relationship between a "cost of living" index and the actual costs of providing educational services in public schools, it will not be a relationship based on logic, but rather one which by definition exists. Thus, a school "spends what it gets," and since "what it gets" is determined in part by some arbitrary "cost of living" allowance, a relationship between the two exists.

Logically, to construct a means to account for cost of education differences in allocating school funds would require that a "cost of education" index, rather than a "cost of living" index, be constructed and used. Just as a "cost of living" index requires a defined and standardized unit of measurement (the average family budget), a school index would also have to define a standard unit. And, as with "cost of living" indices, a "cost of education" index would not reflect what it costs a locality to educate its children (for each locality may choose, if it has the option, to spend its school revenues differently), but the index would reflect what it would cost to purchase a "standard education" in each locality.

We hope the following report will not only serve as a temporary expedient, but will also contribute to future discussions on how the state can most appropriately allow for regional differences in the cost of providing educational services.

Lee Gorsuch
Director
Institute of Social
and Economic Research

CHAPTER 1

A Short History of Instructional Unit Allotments in the Foundation Program

Introduction

It has long been recognized by Alaskan residents that the costs of living and doing business in the state vary substantially, depending on location within the state. In the urban southeast region, southcentral region, and Fairbanks, these costs are high relative to the Lower 48.[1] In the rural areas, much of the interior, and in the north and west, costs of purchasing the same goods and services as Lower 48 and urban Alaskan residents buy can become astronomical. In addition, the costs of operating school systems are compounded by problems of small populations frequently spread over great distances; isolation of the whole school system from cheaper surface transportation, forcing more frequent reliance on air; isolation of individual schools, precluding efficient sizes of buildings and utilization of staff; and more severe climatic conditions in some cases, which cause a myriad of heating and maintenance problems.

In recognition of the differences in operating costs associated with different locations, the laws of the Territory of Alaska, and later the State of Alaska, provided for differences in the level of funding which each local school district received from the state to reimburse an increasingly large part of its operating costs. This

chapter of this report addresses the methods by which the state has adjusted the basic school allotment for the differences in operating costs associated with geography. The reasons for the changes in these methods are not always clear, since it appears that legislatures have been more interested in the proportions of operating expenditures funded than in worrying about why the operating expenditures varied in the first place. However, since equity in funding and the adequacy of those locational differentials to support operations have become an issue, it is worthwhile to examine the history of the differentials to see how the current differentials arose.

Pre-Foundation Program[2]

The original idea for intrastate adjustments in school funding for the cost of living or the cost of doing business in different regions of Alaska has not been found; however, it appears that in Territorial days, prior to Prohibition, the major source for funds of the organized school districts was provided by 25 percent (after February 6, 1909, 30 percent) of the Alaska Fund, which consisted of "all moneys derived from and collected for liquor licenses, occupation, or trade licenses issued for areas outside incorporated towns in the Districts of Alaska", plus 50 percent of these license moneys collected within the incorporated limits.[3] At that time, the Territorial Legislature was prohibited by its "Organic Act" from passing laws relating to the establishment and the maintenance of

schools and from appropriating territorial money for the support of schools. In March, 1917, the legislature was permitted to fund schools for the first time, anticipating the onset of Prohibition in 1918, which was to remove the only source of funding for schools. The Third Session of the Territorial Legislature passed several school-related acts, including one which provided for reimbursement of 75 percent of actual expenditures for maintenance of schools, and one which allowed the incorporation of school districts outside incorporated towns to levy and collect property taxes up to ten mills on real property, passed for the benefit of Anchorage and Nenana, both government towns at that time.[4]

In the Biennial Report of the Commissioner of Education for the biennium ended June 30, 1920, the first reference is made to differentials in reimbursement of school districts based on differences in cost of living. The report contains a recommended annual salary schedule for the school year 1920-21 for the four Judicial Divisions as follows:[5]

	Elementary Teachers	High School Teachers
1st Division (Southeast)	$1,350	$1,500
2nd Division (Northwest)	1,550	1,700
3rd Division (Southcentral)	1,450	1,600
4th Division (Central)	1,650	1,800

In recommending minimum and maximum teacher salary ranges in the Biennial Report for the biennium ended June 30, 1922, the report noted in part:

> There is justification for a difference in the salaries of teachers in the different sections of Alaska. In recommending salaries, the department has taken into consideration the varying costs of transportation and living.[6] (Emphasis supplied by present author.)

In light of later differentials, these may seem exceptionally low; however, during those years about 40 percent of the school districts outside of incorporated towns provided teacher living quarters, and there may have been a less obvious difference between urban and rural areas in costs of living than exists today.[7]

The recommended minimum salary schedule changed from time to time, but the area differentials based on the four judicial divisions did not change substantially. Southeast Alaska (1st Division) was always the base, Southwest and Southcentral Alaska (3rd or Southcentral Division) got an intermediate amount, about five to ten percent above the Southeast, and the Northwest (2nd Division) and Fairbanks and the Interior (4th or Central Division) got an allocation of 12 to 25 percent above Southeast. Certain other changes in the reimbursement formulas altered the actual funds received. In 1924-25, for example, transportation of pupils within districts became reimbursable.[8] Multiple classes of schools were created in 1929, which allowed 80 percent refunds for schools with less than 150 pupils, 75 percent for 150 to 299 pupils, and 70 percent for

school districts with 300 or more pupils.[9] This had the effect of increasing allocations to districts which could be expected to have exceptionally high costs. Chapter 8 SLA 1935 established minimum salaries based on training and experience for each Division, and salary ranges over which refunds would be made.

In 1947, a new minimum salary range was established for administrators at a higher level than teachers, but with the same differentials, by Judicial Division: 8 percent for the 3rd Division and 13.6 percent for the 2nd and 4th. Reimbursement percentages were increased to 75, 80, and 85 percent.[10] In January, 1950, the school district and city school superintendents met and approved a formula for allocating the newly-passed tax on tobacco products. The formula was based both on average daily attendance and the number of professional employees of the school district.[11] In 1955, the reimbursement percentage was not changed, but the schedule was altered so that school districts larger than before got the highest and the medium reimbursement. The new schedule and old schedule were as follows:[12]

	New Schedule (Ch. 49 SLA 1955) Average Daily Membership	Old Schedule (Ch. 40 SLA 1947) Enrollment
85 percent	0 - 199	0 - 150
80 percent	200 - 499	150 - 299
75 percent	500 and over	300 and over

This had the same effect as if the area cost-of-living factors had been increased selectively for most of the schools in the larger towns in the Southeast, plus Anchorage, Fairbanks, Nome, Seward, and Cordova, even though regional salary adjustments were unchanged. During the Territorial period, besides reimbursements of teachers' salaries figured from the ADM schedule, refundable items included the salaries of the janitorial staff, fuel, lights, water, textbooks (after the 1932-34 Biennium), classroom supplies, and some minor items. There is no evidence that reimbursements for area differentials in cost were ever allowed except for teachers' and administrators' salaries.[13]

In the Report of the Commissioner of Education, School Biennium Ended June 30, 1956, it is reported that the Territorial Board of Education asked for a careful study of the "financial support of Alaska schools for the purpose of equalizing the burdens carried by the various school districts." They asked that two methods be explored:

1. That the cost of a minimum yet adequate educational program be determined for each school district and that these costs be related to the financial ability of districts to maintain such programs.

2. That the salaries of all faculty members be paid in total by the Territory with all other costs borne by the schools.[14]

Foundation Program

Such a study was done after statehood and was released in September of 1961.[15] The study found two particularly notable problems related to the distribution of funds among school districts:

1. Areas with the heaviest local tax load, in general, receive smaller percentages of the costs of education from the state than do those with the lightest tax loads, and property taxes for schools tend to bear most heavily on those communities least able to pay.

2. Too much discretionary power over state school funds now rests in the hands of the commissioner of education, with consequent uncertainties in amounts of money available to local school boards at the time programs must be planned.[16]

The report recommended:

> As an approach to the solution of these problems, the Advisory Council recommends that an objective formula for the distribution of state school funds be adopted which will equalize the costs of education as they bear on local property, and equalize the educational opportunities for children while allowing communities to go beyond the foundation program where the people desire to do so.[17]

The recommended program formula included allotments for teachers' salaries, pupils, and attendance centers, subtracting the yield from a theoretical four-mill property tax and of one-half of federal funds received. In addition, the report recommended that the allotment per pupil and per attendance center be increased by ten percent for each mill spent in excess of the basic four mills for current school operations. The idea of the latter ten percent adjustment was to adjust

for conditions peculiar to certain localities which resulted in expenditures beyond the normal four-mill property tax.

The main report recommended general regional cost adjustments and that the resulting dollar allotments be scaled in the following manner:

a. For the allotment per pupil in average daily membership, $150.

b. For each school or "attendance center", to account for supervisory services and extra costs associated with maintaining several remote schools, $1,000.

c. Each teaching unit (compiled from a schedule of an allowance of professional workers based on numbers of students, roughly the same as today's instructional unit), $5,000 in the Southeast Division, $6,000 in the Southcentral, $7,000 in the Central, and $8,000 in the Northwest.[18]

The report explained that

> Careful consideration of the economic data available, including corrections for differences in cost of living already in existence in the school finance formulae, the Ward index of consumer prices in Alaska, studies by Professor George Rogers of the University of Alaska, differentials for Federal employees, and studies by the U.S. Department of Labor, Bureau of Statistics, have convinced the consultants that no better basis is presently available for standardizing correction factors on a regional basis than the presently used judicial divisions. The best standard approximation of these differences is about 12 percent for each step from the Southeastern to the South Central, to the Central, to the Northwestern Judicial District. The adjustments recommended for the teacher unit, <u>when taken with the fixed allocation per pupil</u>, amount to about a 12 percent correction for each district, additive from Southeast to Northwest. (Emphasis supplied by present author.)[19]

Also with respect to regional adjustments, the report recommended in an alternate plan that the cost of financing the (then-existent) state salary schedule could be computed for each district and for the state-operated schools by location, and that that cost be added to other items to determine basic need. The allotment per pupil, it was then recommended, should be regionally adjusted, $140 per pupil in the Southeast, $150 in the South Central, and $160 in the Central and Northwest Judicial Divisions, with a single amount being allocated for each separate school, or "attendance center," with $2,000 for elementary schools, $4,000 for high schools.

As actually adopted in Chapter 164, SLA 1962, the regional adjustments and Foundation Program (the term was first used in the advisory study) were a hybrid of existing programs, new ideas, and the report's primary and alternate recommendations. The teaching units were computed as recommended, but additional units were allowed for administrative expenses in districts over 600 ADM; secondly, for districts over 700 ADM, one additional teacher unit was allowed for a principal in buildings with eight or more classrooms, and a vice-principal in any school with 24 or more classrooms. Instead of the 20 percentage points regional adjustments which had existed previously, the total of teacher units was multiplied by the average teacher salary in the district to get the teaching allotment. The flat $1,000 per attendance center was adopted from the primary recommendations, and the $140, $150, and $160 per ADM on the student

allotment from the alternate recommendations, with the exception that the part of the Southcentral District to the west of 152° West Longitude (basically, Southwest Alaska) was included in the $160 region. Local tax effort required was set at 3.5 mills, and the ten percent local cost adjustment factor was not adopted.

Several adjustments to the funding formulas were adopted between 1962, when the original Foundation Program was passed into law, and the next major revision in 1970.[20] In 1963, additional teacher units were authorized for special education, and in 1966, kindergarten pupils were counted in Average Daily Membership for the first time, with two kindergarten ADM equivalent to one elementary pupil ADM. In 1968, the old ADM allotment schedule was revised upward, but not proportionately. Whereas the previous program had authorized $140, $150, and $160 per pupil in the Southeast, Southcentral, and Central-Northwest Divisions, the new schedule shifted upward by a flat $15, reducing the relative increments from 7.1 percent to 6.5 percent, and from 14.3 percent to 12.9 percent. By some additional terms of this law (Chapter 125, SLA 1968), provision was made for some of the small districts, and districts lacking in local tax resources which had been ignored when the recommended adjustment for tax effort increments over 3.5 mills was not adopted in the 1962 act. A complicated formula distributed an average equivalent additional $15 per pupil where size or availability of local resources

led to disparities. For districts with ADM over 600, the formula was

$$\text{Supplemental Allocation} = \frac{\$15 \text{ per ADM}}{(\text{District Equivalent Valuation per Pupil} \div \text{Statewide Average Equivalent Valuation per Pupil})}$$

For districts with below average valuation per pupil and below 600 ADM,

$$\text{Supplemental Allocation} = \frac{\$15 \text{ per ADM}}{(\text{District Equivalent Valuation per Pupil} \div \text{Statewide Average Equivalent Valuation per Pupil})} \times (1.10) \times (600 - \text{District ADM})$$

In 1969, two changes were made to the Foundation Program. The first removed the requirement for local effort.[21] This had the effect of increasing allocations to all districts without reference to their ability to pay. However, this did not change the implicit regional cost adjustments. In addition, special help was provided for school districts impacted by state activities where pupils' parents or guardians lived or worked on state property not taxable by the district.[22]

The effect of the regional cost adjustments cannot be separated from the effects of the rest of the funding formula and local efforts. It is worth noting that in a majority of cases, spending per pupil increased relative to Anchorage (Table 1.1) during the period 1962-69. Since the Southeast Division was still considered the least expensive in which to operate a school, and state funding reflected this, it is not especially surprising that most districts in this Division

Table 1.1

District Schools: Average Expenditures
(Less Capital Outlay and Debt Service)
per ADM as a Percent of Anchorage

District	1963-64 through 1965-66	1966-67 through 1968-69
Anchorage	100.0	100.0
Bristol Bay	130.6	154.8
Cordova	82.6	90.5
Craig	116.8	142.2
Dillingham	125.0	128.2
Fairbanks	114.4	121.7
Galena	---	---
Haines	116.8	98.0
Hoonah	97.0	100.2
Hydaburg	113.4	103.1
Juneau	88.1	97.9
Kake	111.8	100.0
Kenai	113.3	114.0
Ketchikan	84.0	90.4
King Cove	108.3	102.2
Klawock	117.9	109.6
Kodiak	90.4	97.5
Matanuska-Susitna	125.0	131.3
Nenana	112.8	124.9
Nome	91.6	97.7
North Slope	---	---
Pelican	112.6	112.6
Petersburg	90.7	90.9
Selawik	---	---
Sitka	89.4	93.6
Skagway	109.3	107.0
St. Marys	---	62.6*
Unalaska	86.2	104.1
Valdez	117.6	122.8
Wrangell	90.4	94.7
Yakutat	105.3	143.8

*1968-69 only

Source: Department of Education, Annual Reports.

showed expenditures per pupil less than that in Anchorage. Only a few districts spent significantly more per pupil than Anchorage did over the period. It is not certain whether this occurred entirely because of lack of local tax base (several districts increased expenditures significantly after the funding increase, and removal of the required-effort clause in 1969), or because costs were not as far above Anchorage for similar programs as commonly supposed. See Table 1.2 as an example of the uneven increase in expenditures when funding periodically increased, as it did with the increase in allotments in 1968.[23]

In 1969, a second major study of the Foundation Program was conducted with the support of the U.S. Office of Education.[24] The research was undertaken as a result of two events in 1969. The first was that "the U.S. Congress and Alaska State Legislature had eliminated two deduction factors that had provided elements of equalization among districts."[25] The second was the increasing level of state participation, which indicates that perceived inequities still existed.[26] The final report was published in January, 1970, and included as one of its recommendations

> That the state adopt an equalized percentage method for determining the state's share of operating revenue for the basic program for each district. (Emphasis supplied by the present author.)[27]

Table 1.2

Total Expenditures (Less Capital Outlay and Debt Service)/ADM
1967-68 and 1968-69 School Years

School District	1967-68	1968-69
Anchorage	$757	$874
Bristol Bay	1,405	1,277
Cordova	707	824
Craig	1,144	1,285
Dillingham	1,082	1,206
Fairbanks-North Star	928	992
Haines-Pt. Chilkoot	792	714
Hoonah	752	865
Hydaburg	899	712
Juneau	795	776
Kake	706	1,040
Kenai Peninsula	869	978
Ketchikan-Gateway	701	818
King Cove	925	763
Klawock	875	1,059
Kodiak Island	761	928
Matanuska-Susitna	1,039	1,102
Nenana	955	1,059
Nome	767	824
Pelican	795	1,284
Petersburg	709	785
Sitka	685	896
Skagway	877	940
St. Marys	--	547*
Unalaska	691	1,052
Valdez	1,021	1,054
Wrangell	669	784
Yakutat	1,246	1,025

*Half-day kindergarten

Source: Department of Education, Annual Reports.

The study recommended a change in the basic plan for financing public elementary and secondary education, which would contain two elements: a "standard" or "basic" educational program, which would be supported by an Equalized Percentage Plan, and a series of supplemental programs to compensate for unique needs of each district. The report was confined to basic education. Further, on page 6 of the Final Report comes this recommendation:

> One element necessary for the achievement of accountability is the determination of unit costs for each program. Although such costs would tend to vary from program to program and district to district, such variations should be subject to logical explanation.

Had the report proceeded to recommend that cost of operations be determined for program budget line items in different parts of the state, true indicators of differences in the cost of education might have been obtained.

In fact, however, the report recommended that "basic need" be determined in dollars, not programs, and be derived from the number of instructional units allowed for each district. The instructional unit was dependent on ADM, plus allowances for special education and vocational education. The schedules were similar to the old teaching units schedules. Basic need was determined by multiplying the number of instructional units times the "base allotment." The report then says:

> The base allotment is increased by percentage factors, depending on variations in costs of providing instruction in different parts of Alaska.[28]

This seems clear enough, but perhaps because of the lack of sufficient economic data mentioned among other data deficiencies, the report recommended in its proposed legislation dollar increments based on the Judicial Division boundaries included in the old (pre-1970) law which work out as follows in percentage terms:

1.	Southcentral, Southeast	100 percent of Base Allotment
2.	Central	105 percent of Base Allotment
3.	Northwest	110 percent of Base Allotment
4.	Lack of access to Anchorage, Fairbanks, or Ketchikan by road, rail, or ferry	Additional 5 percent of Base Allotment

In the proposed law, these were called Instructional Unit Allotments. When the Advisory Council on State Financial Support[29] met to hear the consultants' report, the Council changed the recommended language to speak of the Instructional Unit Allotment as percentages of the base instructional unit allotment, the latter to be assigned in a separate section of the law. This may be the source of part of the confusion over the proper regional adjustments, since the Council said, in explanation:

> The Council feels that Section 14.17.051, as proposed, should be changed to reflect a base instructional unit allotment and additional factors for cost of living rather than fixed dollar amounts. (Emphasis supplied by present author.)[30]

There was no accompanying justification for either the consultants' or Council's set of numbers, but the Council did recommend a different set:

1.	Southeast, Southcentral	100 percent of Base Allotment
2.	Central	110 percent of Base Allotment
3.	Northwest	115 percent of Base Allotment
4.	Lack of access to Anchorage, Fairbanks, or Ketchikan by rail, road, or ferry	105 percent of Instructional Unit Allotment (as determined above)

The Council's percentages were adopted into law in 1970 (Ch. 238, SLA 1970), but it is entirely unclear what relationship they bore to either the relative costs of operations, or to the relative costs of living. The average actual annual expenditures per student, and the cost of service adjustment factor implicit in the Instructional Unit Allotments are shown in Table 1.3 for the years 1971-72, 1972-73, and 1973-74. The change in the funding system, with Anchorage as the new base, increased the relative level of expenditures per student compared to Anchorage in every school in the state except Fairbanks. On a per-student basis, the new funding formula and economic conditions permitted or forced expenditures which were higher than the regional adjustment factors alone would have indicated. It may have been partly as a result of comparing actual expenditures with the unexplained regional adjustments in the 1970 law which adjusted for "cost of living" or "cost of operations" that ultimately led the Department of Education to adopt as their new

Table 1.3

District Schools: Average Expenditures per ADM as a Percent of Anchorage

District	1971-72 through 1973-74	Cost of Service Adjustment
Anchorage	100.0	100.0
Bristol Bay	177.6	120.75
Cordova	125.5	105.0
Craig	181.9	100.0
Dillingham	159.7	115.5
Fairbanks	113.6	105.0
Galena	155.6*	120.75
Haines	119.4	100.0
Hoonah	162.2	100.0
Hydaburg	180.8	105.0
Juneau	99.1	100.0
Kake	155.8	100.0
Kenai	124.1	100.0
Ketchikan	101.1	100.0
King Cove	142.4	120.75
Klawock	167.6	100.0
Kodiak	127.9	105.0
Matanuska-Susitna	136.6	100.0
Nenana	175.8	110.0
Nome	140.2	120.75
North Slope	197.0*	120.75
Pelican	193.1	105.0
Petersburg	116.8	100.0
Selawik	---	---
Sitka	105.7	100.0
Skagway	135.5	100.0
St. Marys	188.9	120.75
Unalaska	186.4	120.75
Valdez	147.1	105.0
Wrangell	110.0	100.0
Yakutat	199.8	105.0

*1973-74 only

Source: Alaska State Department of Education, Annual Report: Statistics

regional "cost of living" index after 1975 the "cost of living differentials" developed by the Department of Community and Regional Affairs.[31] This gave cost of operations (or living) adjustments in greater geographic detail and included larger multipliers than did the previous regional adjustments. In any case, the revision of the regional adjustments used in calculating the Instructional Unit Allotments--hereafter, these percentage adjustments will be called the Instructional Unit Allotment Index--took place in 1975 with the approval of, but relatively little notice from, the State Legislature, and is now part of state law. The history of the Community and Regional Affairs index appears as part of the next chapter.

Summary

In conclusion, it can be said that legislators and education administrators have always recognized that one feature of a state funding program for local school operations in Alaska must be an allowance for differences in the costs of doing business in different parts of the state. This has typically taken the form of a "cost of living" differential, rather than a true "cost of operations" differential, which is multiplied times some base allotment. Various other adjustments in the funding schemes have been made from time to time which have had effects on funds received at least as great as the "cost of living" entitlement.

Recently, the Department of Education adopted the Community and Regional Affairs regional "cost of living" differentials as a basis for the Department of Education's regional differentials, but the confusion over "cost of living" and "cost of operations" persists. This confusion has also resulted in attempts to define away the problem by specifying "basic need" in dollar terms, which forecloses a discussion of how the costs of similar education programs actually vary between locations. In addition, the state has abandoned some ideas for funding education programs which have merit. Among these is the concept of state matching funds for extraordinary tax effort.

It should be remembered that "cost of living" may be only slightly related to the cost of operating similar school programs, and that it is really the index of the cost of school operations which should be used. Improving the estimate of the "cost of living" index may not necessarily improve the implicit estimate of the "cost of operations" index for which it is a proxy. However, if, as is probably true, both indices do not change enough from place to place to show the degree to which actual costs diverge, then the improved "cost of living" index also improves the estimate of the true relative costs of school operations. We present such an index in the next chapter.

Chapter 1

Footnotes

1. Much higher with respect to housing, slightly higher with respect to some other goods and services.

2. This section is compiled from four sources: Alaska Department of Education, Final Report and Recommendations of the Advisory Council on State Financial Support to Public Schools, Juneau, Alaska, January 1970; Alaska Legislative Finance Division, "A Brief Historical Review of Alaska's School Foundation Program," Prepared by Richard A. Guthrie, Juneau, Alaska, December 12, 1974; A Foundation for Alaska's Public Schools: Report of a Survey, Erick L. Lindman, Director, Prepared for the Alaska State Board of Education, n.p., Alaska State Board of Education, 1961; Territory of Alaska Department of Education, Report of the Commissioner of Education (Biennial).

3. Report of the Commissioner of Education for the Year Ending June 30, 1918, June 30, 1919, and June 30, 1920, pp. 22-23.

4. Ibid., p. 27.

5. Ibid., p. 47. The four Judicial Divisions can be generally described as follows: the 1st Division encompasses Southeast Alaska, the 2nd Division encompasses the western coastal area from Nunivak Island north, and the Arctic coastal area inland through NPR4 as far as the Colville River. The 3rd Division includes Bristol Bay, the Aleutians, and Southcentral Alaska south of the Alaska Range. The 4th includes Bethel and most of the Yukon River drainage, plus the North Slope from the Colville River east.

6. Report of the Commissioner of Education for the Years Ended June 30, 1921, and June 30, 1922, p. 28.

7. Nearly all of Alaska consisted of very small towns or settlements scattered over great distances. There were no scale economies in trade characteristic of later urban areas, so prices probably depended more on shipping distance than local conditions. The large volume of traffic and economies of scale in distribution have reduced costs in the Anchorage area to or below those in the Southeast, which is closer to Seattle, the main shipping point.

8. Report of the Commissioner of Education, Biennium Ended June 30, 1926, p. 27.

9. Report of the Commissioner of Education, Biennium Ended June 30, 1930, p. 30.

10. Report of the Commissioner of Education, Biennium Ended June 30, 1948, p. 15.

11. This may be where the precedent was established to pay Alaskan schools on a formula basis for expenses other than salary.

12. Some schools actually got less money than before. The most vulnerable schools had enrollment between 150 and 200 students. There was also a change in the way in which enrollment was figured for funding purposes.

13. The evidence is not conclusive. For example, one former commissioner thought he remembered regional adjustments being used in Kodiak and the western end of the Aleutian Chain. This could not be confirmed.

14. Report of the Commissioner of Education, School Biennium Ended June 30, 1956, p. 61.

15. A Foundation for Alaska's Public Schools: Report of a Survey, Erick L. Lindman, Director, Prepared for the Alaska State Board of Education, n.p., Alaska State Board of Education, 1961.

16. Ibid., pp. xxiv-xxv.

17. Ibid., p. xxv.

18. Ibid., p. 138.

19. Ibid., pp. 138-139.

20. "A Brief Historical Review of Alaska's School Foundation Program," Alaska Legislative Finance Division. Prepared by Richard A. Guthrie, Juneau, Alaska, December 12, 1974. The laws for 1962 and 1970 were Ch. 164 SLA 1962, and Ch. 238 SLA 1970.

21. Ibid., p. 12. The changed statute is contained in Ch. 96 SLA 1969.

22. Ibid., p. 13.

23. Ibid., p. 11.

24. This study was done under the auspices of the Advisory Council on State Financial Support, an ad hoc committee appointed by Governor Keith Miller. The final report of the Advisory Council, Alaska Department of Education, Final Report and Recommendations of the Advisory Council on State Financial Support to Public Schools, Juneau, Alaska, January 1970, contains the study recommendations, plus changes suggested by the Advisory Council.

25. Ibid., "Background of the Study."

26. Ibid.

27. Ibid., p. 3.

28. Ibid., p. 8.

29. See Footnote 24.

30. Final Report, p. 19.

31. See Alaska Department of Community and Regional Affairs, "Summary of Administrative Changes," 1975.

CHAPTER 2

Comparison of the Instructional Unit Allotments with Available Alaskan Interregional Cost of Living Indices

Introduction

As discussed in the previous chapter, the feature of the Public School Foundation Program designed to compensate school districts for interregional cost differences is called the instructional unit allotment. Sometimes, it is referred to as a regional differential. The percentage of this allotment depends upon the geographic location of school districts and varies on a scale from 103.75 percent to 133.75 percent. The table of different instructional allotment values will hereafter in this report be referred to as the Instructional Unit Allotment Index.[1]

This chapter addresses the question of whether the current Instructional Unit Allotment Index allows for actual differences in the "cost of living" in various parts of Alaska. There are two fundamental problems associated with accounting for differences in the costs of purchasing and utilizing goods and services in the various parts of the state. First of all, the requisite data are simply not available. Secondly, the group of goods and services

which people actually consume (also called "market basket" or "consumption bundle") in the urban parts of Alaska differs from that which is consumed by the people of rural Alaska. This second problem is more subtle and fundamental.

Since the second problem is the more basic of the two, it will be discussed first. Following this will be a discussion of the limited Alaskan data sources and their use in creating a "cost of living" index for Alaskan locations. Finally, the Instructional Unit Allotments, which are apparently based on a 1972 Division of Personnel survey and additional work done in 1974 by the Department of Community and Regional Affairs, will be compared to both interregional price differences and indicators provided by cost of living adjustments in negotiated labor contracts.[2] In this way, the study provides some insight into the question of whether the Instructional Unit Allotments actually capture interregional differences in the cost of living.

Theoretical Problems of Indexing for Costs of Living

A very common way in which economists and statisticians have expressed the changes in "costs of living" at a place over time, and have expressed differences in "cost of living" at a fixed time between places, is to create a price or cost index. No such index is comprehensive enough to capture all differences in "costs of living," however, which is why "cost of living" should always be placed in quotation marks.

The "cost of living" index usually is constructed by systematically obtaining the total price of that group of goods and services actually known to be purchased or utilized at a given place and time (also called a "market basket" or "consumption bundle"). The total cost of this consumption bundle is then compared to the cost of the (theoretically) identical bundle at the same location over time, as in the case of the U.S. Bureau of Labor Statistics' Consumer Price Index (CPI) or the bundle's total cost is compared to the cost of a similar bundle of goods and services supporting an equivalent standard of living in another location, as in the periodic BLS budget comparisons for standardized households at several U.S. urban locations.[3] Either type of comparison depends for its effectiveness on the presumption that the "costs of living" in a location consist largely of goods purchased by households in the market place, plus tax payments; secondly, that the technician constructing the index has chosen a bundle of goods and services which actually provide the same standard of living at all locations or times being compared. The fact that neither assumption is ever wholly accurate is why there is never a perfect "cost of living" index.

For example, various Alaskan locations differ markedly in benefits and costs which are not the result of market purchases or tax payments. Included are differences in the proximity and quality of various kinds of free recreation opportunities, the opportunity

to pursue subsistence activities, the quality of interpersonal relationships, and the levels of noise, pollution, and inconvenience associated with different locations in Alaska.[4] None of these is traded in the market place or has a market price, but all are certainly part of the bundle of costs and benefits which people actually associate with living in a place. Secondly, the bundle of traded goods also differs in quantity and type between places in ways that are difficult to incorporate into a single common standard of living, because people substitute some consumption for cost in subtle ways, both when goods are more costly and when their incomes are lower. One such substitution is made in areas in Alaska without significant road nets. In such places, a boat or a snow machine may be substituted for a car as the principal means of local transportation. If so, and if the costs of passenger miles differ between modes, there is a question whether a "cost of living" index should account for only the differences in costs of car transportation between places; or whether the market basket be adjusted to count a snowmobile and/or a boat as "equivalent" to a car for local transportation, so that the index measures both price and consumption differences. More generally, there is a question whether regional cost comparisons should attempt to translate the Anchorage, Juneau, or Fairbanks consumption levels to other lower income locations in the state, or whether a serious attempt should be made to adjust for all the differences in goods actually consumed in different locations, if there is no assurance

that by pricing these bundles, one is measuring not only differences in income. In practice, the Bureau of Labor Statistics adjusts in detail for some of the relatively few Lower 48 place-to-place differences[5] in their published standard budgets for U.S. urban locations; in Alaska, the paucity of data and the cost of collecting it have prohibited all but the crudest adjustments.

The theoretical and philosophical problems of proper index construction have direct implications for school finance policy, if the "cost of living" index is to be used as a method of allocating funds. The question comes down to choosing between a fixed bundle of goods and services, or a variable one which allows for actual differences in consumer choices between places at some point in time. If the state implicitly chooses (by its choice of a fixed bundle index) to provide identical levels of real funding in both rural and urban areas, the costs of doing so will be higher in most cases than if the state uses an adjustable base "cost of living" index to adjust costs of school operation which depends upon Alaskan rural residents' lower incomes and decisions to substitute away from the more expensive goods of the urban market baskets. On the other hand, if a fixed bundle is not used, "equivalent" consumption and school opportunities in rural Alaska will be more or less costly relative to urban areas, depending critically on whose definition of "equivalence" is being used. Insofar as is possible, this study uses fixed weights and identical bundles to avoid the "equivalence" problem.

Practical Problems of Indexing

Even if the philosophical problems of cost indexing did not exist in Alaska, there would remain the practical problem that insufficient data exists on most expenditure items to allow comparison of family expenditures between places. There is no recent survey of expenditure patterns or prices which conforms to Bureau of Labor Statistics practice upon which to base standardized budgets for different locations in Alaska.[6] Until 1970, the BLS computed an intercity index for Anchorage, Fairbanks, Juneau, and Ketchikan which reflected the differences in the cost of the average pattern of expenditures of Alaskan wage- and clerical-worker families of two or more persons who were full-year residents in 1959 or 1960. Beginning in 1970, however, this series was terminated,[7] and the only information on Alaskan intercity differences in costs of consumption which remains is the food market basket data published quarterly by the Cooperative Extension Service of the University of Alaska,[8] punctuated by occasional special-purpose surveys of varying coverage and reliability. However, given some fairly plausible assumptions concerning consumer behavior, it is possible to construct a crude intercity index which, although it does not conform to BLS standards, provides some indication of some of the differences in costs of living between places within Alaska. The discussion which follows compares the data actually available with that which the BLS specifies in BLS Bulletin 1570-5: Three Standards of

Living for an Urban Family of Four Persons, Spring 1967, which contains the basic guidelines for compiling budget cost comparisons for the U.S. Intercity Index.[9] The budget proportions spent on each main category of expenditure for Anchorage in 1975 are shown in Table 2.1. The budgets are for a family of four, and are based on BLS consumer surveys and standards published by several agencies.[10] Each budget item will be discussed separately.

Food

The Bureau of Labor Statistics' standard budget includes both food consumed at home and food consumed away from the home. Moderate income levels begin by allowing for a total of 4,368 meals served at home to a family of four persons per year.[11] It is intended that the moderate income food-at-home component fulfill both the United States Department of Agriculture moderate-cost food plan of 11 food categories for the "average" four-person family, and also reflect regional consumption patterns for specific foods in each of the categories shown in the USDA 1965 Household Food Consumption Survey. Prices are calculated for each city from a representative sample of chain and independent food stores, weighted by the total volume of sales of each type of food for all stores.[12] Food away from home in the BLS budgets reflects the average number of school lunches and restaurant meals eaten by low, moderate, and upper income families in a specific place. The number of meals eaten at home is adjusted downward to allow for meals away from home and snacks eaten by each budget level family.[13]

Table 2.1

Major Expenditure Categories in the Annual Budgets
for Four Person Families, Anchorage, Autumn 1975

	Lower Budget		Intermediate Budget		Higher Budget	
	amount	percent	amount	percent	amount	percent
Total Budget	$15,226	100.0	$21,229	100.2	$30,385	100.1
Total Family Consumption	11,812	77.6	15,865	74.7	21,112	69.5
Food	3,715	24.4	4,581	21.6	5,624	18.5
Housing	3,943	25.9	5,838	27.5	8,408	27.7
Transportation	1,136	7.5	1,523	7.2	1,800	5.9
Clothing	966	6.3	1,330	6.3	1,823	6.0
Personal Care	309	2.0	463	2.2	710	2.3
Medical Care	1,285	8.4	1,286	6.1	1,331	4.4
Other Family Consumption	458	3.0	844	4.0	1,416	4.7
Other Items	556	3.7	846	4.0	1,431	4.7
Taxes and Deductions:						
Social Security and Disability	868	5.7	868	4.1	868	2.9
Personal Income Taxes	1,990	13.1	3,650	17.2	6,974	23.0

Source: "BLS Revises Estimates for Urban Family Budgets and Comparative Indexes for Selected Urban Areas, Autumn 1975." Bureau of Labor Statistics, USDL 76-759, May 5, 1976.

Alaskan data is not nearly so complete a reflection of actual family needs, when used to compare food budgets in different parts of the state. Since 1951, the University of Alaska Cooperative Extension Service has compiled the Quarterly Report on Alaska Food Prices for several Alaskan cities (six when the studies began, 13 in the latest). Although 45 items, whose prices are regularly reported by the Extension Service, appear in the BLS food market basket used in compiling the Consumer Price Index and the Intercity Index, the chief objection which can be made to the use of the Extension Service food market basket to compare locations is that the food market basket quantities bear an unknown relationship to actual consumer choices in food budgets for food at home. Secondly, food away from home is ignored, possibly a drawback in areas with significant school lunch programs.[14] In an attempt to see how serious a bias the lack of weighting in the Quarterly Report market basket might cause, the prices of individual items in the June, 1976, Quarterly Report were indexed to Anchorage prices, and then weighted by the importance each item carries in the BLS Consumer Price Index budget for Anchorage. The results appear in Table 2.2. The BLS budget weighting experiment reveals some differences from the unweighted Cooperative Extension Service food market basket. If each item had been purchased in July, 1976, in each surveyed city in the state in the same amounts as in Anchorage, as is implied by using the Anchorage CPI weights, the market baskets in most cities would have been closer in cost to

Table 2.2

Alaska Food Price Indices, June - July 1976

District or REAA and Place[1]	No. of Items Available	Cooperative Extension: Unweighted Agricultural Experiment Station[2]	Agricultural Experiment Station Prices CPI Weights[3]	State Division of Personnel[4]
Anchorage	44	100.0	100.0	100.0
Bristol Bay (Naknek)	--			---
Cordova	44			123.5
Craig	--			---
Dillingham	43			141.6
Fairbanks	44	105.5	102.2	116.8
Galena	44			160.0
Haines	44			105.1
Hoonah	--			---
Hydaburg	--			---
Juneau	44	96.6	93.1	95.7
Kake	--			---
Kenai (Kenai,	44	108.1	108.0	109.6
Soldotna, and	44			109.2
Seward)	44	115.0	110.8	116.0
Ketchikan	44	99.8	93.7	100.9
King Cove	--			---
Klawock	--			---
Kodiak	44	110.1	106.8	114.8
Mat-Su (Palmer)	44	104.6	100.8	107.3
Nenana	44			116.0
Nome	44	155.7	160.1	160.4
N. Slope (Barrow)	42			165.6
Pelican	--			---
Petersburg	--	99.8	95.1	---
Selawik	--			---
Sitka	44	96.2	92.8	101.3
Skagway	42			103.4
St. Marys	38			179.0
Unalaska	--			---
Valdez	44	115.2	114.5	113.0
Wrangell	44			100.4
Yakutat	43			133.0

Notes: See end of table.

Table 2.2 (continued)

District or REAA and Place[1]	No. of Items Available	Cooperative Extension: Unweighted Agricultural Experiment Station[2]	Agricultural Experiment Station Prices, CPI Weights[3]	State Division of Personnel[4]
N.W. Arctic				
(Kotzebue)	43			142.9
Bering Strait				
(Nome)	44	155.7	160.1	160.4
Lower Yukon				
(Emmonak)	42			160.6
Lower Kuskokwim				
(Bethel)	42	148.9	150.7	148.0
Kuspuk				
(Aniak)	--			---
S.W. Region				
(Dillingham)	43			141.6
Lake & Peninsula				
(Naknek)	--			---
Aleutian Chain				
(Cold Bay and	42			117.0
Sand Point)	36			116.0
Pribilof Islands				
(St. George)	--			---
Adak				
(Adak)	--			---
Iditarod				
(McGrath)	42			164.0
Yukon-Koyukuk				
(Nenana and	44			116.0
Tanana)	42			159.7
Yukon Flats				
(Ft. Yukon)	37			142.9
Upper Railbelt				
(Clear)	--			---
Delta/Greely				
(Delta Junction)	--			---
Alaska Gateway				
(Tok)	--			---
Copper River				
(Glennallen)	--			---
Chatham				
(Angoon)	--			---
S.E. Islands				
(Ketchikan)	44	99.8	93.7	100.9
Annette Island				
(Metlakatla)	--			---
Chugach				
(Whittier)	--			---

Notes: See end of table.

Table 2.2 (continued)

Table Notes

1. An item of concern in reporting by school district is the changeover from the old State-Operated Schools, which ran on a consolidated budget, to Regional Education Attendance Areas (REAA's). While this changeover was not accomplished until the 1976-77 school year, there are audited records available for the 1975-76 school year which can be compared to the old district schools' expenditure records. Because the REAA's are different in some cases from the accounting areas under the most recent version of the State-Operated Schools, called the Unorganized Borough School District (AUBSD) in 1975-76, it has been necessary to regroup individual schools' REAA Average Daily Memberships and instructional units so that they correspond to each region under the AUBSD system. Prices and expenditures are reported on an AUBSD basis, using REAA names for regions, as applicable. Numbers for multiple REAA groupings are an average for the combined districts. Specific localities are shown in parentheses.

2. June, 1976, prices. Source: Cooperative Extension Service.

3. Consumer Price Index market basket weights are those in effect in 1976.

4. State Division of Personnel and Labor Relations used Cooperative Extension Service methodology. July, 1976, prices are reported.

Anchorage than the unweighted index indicates, while Nome and Kotzebue reveal greater disparity. Since the weighted index shows the relative cost of a food market basket related to actual proportions of consumer food expenditures on each item or type of item, the weighted index would ordinarily be preferred to compare Alaskan locations for cost of food at home. Neither index adjusts for food eaten away from home or for differences in Extension Service and BLS data collection methods.

A second source of data on relative food prices exists for additional Alaskan locations for 1976. The State Division of Personnel recently conducted a survey of food prices and costs and of housing costs in several cities in July, 1976, throughout the state, as required by section 39.27.030 of Alaska Statutes. Prices were collected on 49 food items, 44 of which are included in the Cooperative Extension Service food market basket and were used to compute the index shown in the last column of Table 2.2. For each of the items, an average standard shelf price was computed in each of the 30 locations surveyed. This methodology differs from the BLS methodology, since there is no attempt to weight the prices by volumes sold, or to randomly select outlets in the larger cities. However, the July price index for the 30 locations does not appear to be much different from the June price index in the 13 cities for which both indices are reported, and both show substantial agreement with the weighted index. In cases where not all items were available

for comparison, the Division of Personnel constructed the index from the total cost of the items which were available in Anchorage and the other surveyed city. Thus, the price indices for cities which are only in the Division of Personnel survey and which have fewer than 44 items available are not directly comparable, being based upon different market baskets; however, if one is willing to assume that the excluded items would not give a significantly different relative cost from a "true" intercity food cost index, it is permissable to use the survey, and take advantage of the fact that 30 cities are reported instead of 13.

Housing

The housing component of the BLS family budget series are again related to space, furnishings, and quality requirements for housing for homeowners and renters, established by the American Public Health Association and the U.S. Public Housing Administration.[15] For moderate income renters, the shelter standards called for an unfurnished five-room unit in sound condition, with a fully equipped kitchen, hot and cold running water, electricity, central or other installed heating, access to public transportation, schools, grocery stores, play space for children, and located in a neighborhood free from hazard or nuisances. For the homeowner family, shelter standards called for a five- to six-room house, one to one and one-half baths, fully equipped kitchen, hot and cold running water, electricity,

and central or other installed heating, with neighborhood standards the same as for renters. The costs for renters included contract rent and insurance on household contents and for injuries to persons on the property. Rent was to include (or was adjusted to include) water, heat, light, cooking fuel, garbage collection, and refrigerator and range. For homeowners, costs included mortgage principal and interest on a house purchased seven years previous to the date of the index, divided into conventional, FHA, and VA mortgages, with standard terms for each. In addition, costs for shelter included costs of fuel and utilities, based on fuel requirements to keep the house at 70° F. and moderate allowances for use of specified appliances. All families were allowed budget amounts for specified quantities of household furnishings, and household operations costs for cleaning supplies, paper supplies, repair and maintenance costs, and postage and telephone. Upper budget families were allowed a specified amount for hotel and motel costs.

The most recent Alaska housing cost information available on middle-income housing is contained in the most recent Division of Personnel housing survey conducted in July of 1976. The data technicians attempted to obtain a representative cross-section sample of the housing available in each community surveyed, although a high proportion of state employees was selected, because they were most affected by the survey.[16] The data were carefully reviewed for entries, omissions, and data which misrepresented the community.

It was important to do this, since the sample was very small in some cases and not random in any case.[17] Comparing the state data with the BLS housing cost, one finds the Division of Personnel data show a less comprehensive list of items counted in housing costs. Included in the Division of Personnel cost data were house payments, electricity, fuel for cooking and heating, water and sewer utilities, trailer space payments and insurance (rent for renters). Those persons who had housing provided for them by employers were included in the sample. Apparently excluded were household operations and maintenance, and purchase of furnishings and supplies.

Far more important is the fact that the housing expenditures in the samples, however closely they reflect actual expenditures, do not show operations costs for a standard quality home of the type used in the BLS budgets. In fact, the relatively low "costs" of housing in the survey's rural communities probably reflects lower incomes and lower quality, not lower costs. (Table 2.3) Also, the fact that those who had subsidized housing were included makes the survey show an artificially low cost of housing. The costs of maintaining family housing in a given location should be about the same, except for tax considerations, whether housing is privately acquired or whether it is provided. The difference is that in one case, the employer absorbs part or all of the costs and this part shows up as a lower "cost of living" to the consumer.

Table 2.3

Division of Personnel and Labor Relations
1976 Housing Survey Results

Place	Average Housing Expenditures per Household	Average Housing Cost per Square Foot	Housing Cost per Sq. Foot as a Percent of Anchorage	Average Housing Condition
Anchorage	$5,703	$4.62	100.0	1.59
Barrow	3,188	4.50	97.4	1.90
Bethel	3,832	4.66	100.9	2.20
Cold Bay-Sand Point	1,460	0.90	19.5	2.25
Cordova	4,988	2.73	59.1	1.76
Dillingham	3,076	2.94	63.6	2.29
Emmonak	1,920	3.53	76.4	2.71
Fairbanks	5,699	6.88	148.9	1.71
Fort Yukon	3,119	4.54	98.3	2.13
Galena	2,694	5.96	129.0	2.80
Haines	4,051	4.43	95.9	1.67
Juneau	5,353	4.57	98.9	1.71
Kenai	4,706	3.92	84.8	2.11
Ketchikan	5,075	4.35	94.2	1.72
Kodiak	4,922	4.67	101.1	1.56
Kotzebue	3,537	6.36	137.7	1.71
McGrath	3,683	4.62	100.0	1.77
Nenana	2,378	3.34	72.3	1.86
Nome	4,808	7.12	154.1	2.55
Palmer	6,364	5.68	122.9	2.00
Seward	3,840	3.25	70.3	1.79
Sitka	5,431	3.94	85.3	1.52
Skagway	3,908	4.47	96.8	2.00
Soldotna	5,646	4.44	96.1	1.80
St. Marys	3,828	5.84	126.4	2.71
Tanana	2,451	2.98	64.5	2.00
Valdez	5,459	5.56	120.3	1.46
Wrangell	4,931	3.02	65.4	1.56
Yakutat	3,237	3.57	77.3	1.50
Average of All Locations Surveyed	4,113	4.39	95.1	1.94

The excluded portion of cost is still part of doing business in the community, and ought to be included, when funds are being allocated to communities to provide salaries and housing. This warning concerning housing applies to the towns of Barrow, Bethel, Cold Bay, Emmonak, Galena, Kotzebue, Nome, St. Marys, and Valdez in Table 2.3.

The housing quality scale in Table 2.3 is dependent upon the interviewer rating a house on a 1 to 4 scale, with 1 associated with a new or well-maintained dwelling, and 4 associated with poor or condemned condition. Since the quality scale is intended to be ordinal (3 is worse than 1, but not necessarily three times worse), rather than cardinal (3 is three times worse than 1), it is not possible to obtain a cost per constant quality unit by multiplying the cost per square foot rating times the ordinal quality rating.[18] Therefore, a comprehensive cost index employing food prices and cost per square foot of housing in comparing food and housing costs between places would be one which translates Anchorage food consumption to all parts of the state, but adjusts living standards in housing to local housing market conditions and incomes which have prevailed historically rather than meet a single housing standard everywhere in the state. This is not consistent with BLS procedures, which require a constant standard of living. In fact, it will understate the true cost of living in those areas where quality of housing is lowest; or alternatively, it assumes that housing meeting some moderate adequacy standard will be provided at cost to the consumer equal to that of lower quality housing.[19]

Heating Fuels and Electricity

Two major ongoing expenditures for running a house in Alaska are heating fuels and electricity. A combination of units which would be available for most modern housing in Alaska is some form of oil space heat and electricity for light, refrigeration, hot water and cooking. Natural gas space heat, which is prevalent in Kenai, Anchorage, and Barrow, is not currently available in most of the towns in the state. All-electric homes are also fairly rare in most of the state. Although heating and light are included in the housing costs mentioned in the previous section, it is worthwhile to demonstrate how these vary by location. Table 2.4 shows the index of retail prices of No. 2 fuel oil in 400 gallon amounts or larger for 1976 (excluding city and borough taxes), and the December, 1975, average monthly residential electricity bill at 500 killowatt hours for reporting utilities in each school district and REAA in the state for which such information is available. That these diverge far more from the Anchorage rates than overall housing costs indicates either that housing rents in other parts of the state are low enough to offset utilities and fuel costs (which would be unlikely, given that construction costs are also higher outside of Anchorage), or that people outside of Anchorage purchase less fuel and lights and "house" with their housing expenditures, which is more likely.

Table 2.4

Electricity Prices, 500 KWH/Mo. Use, and Fuel Prices

District or REAA	Average Residential Bill for 500 KWH/Mo.[1]	Electricity Bill Percent of Anchorage Monthly Bill	Autumn 1976 No. 2 Fuel Oil Price Retail $/Gal.[2]
Anchorage	$17.62	100.0	.509
Bristol Bay	57.66	327.2	.555
Cordova	27.50	156.1	.519
Craig	48.85	277.2	.508
Dillingham	57.85	328.3	.565
Fairbanks	33.54	190.4	.575
Galena	---	---	.563
Haines	30.70	174.2	.508
Hoonah	50.00	283.8	.508
Hydaburg	50.90	288.9	---
Juneau	22.85	129.7	.508
Kake	---	---	---
Kenai	24.98	141.8	.509
Ketchikan	17.65	100.2	.504
King Cove	---	---	---
Klawock	---	---	.508
Kodiak	31.53	178.9	.521
Matanuska-Susitna	29.25	166.0	.520
Nenana	34.99	198.6	.575
Nome	50.00	283.8	.568
North Slope	66.00	374.6	.926
Pelican	26.00	147.6	.508
Petersburg	---	---	.508
Selawik	82.50	468.2	---
Sitka	19.00	107.8	.508
Skagway	34.60	196.4	.508
St. Marys	82.50	468.2	.600
Unalaska	---	---	---
Valdez	45.50	258.2	.509
Wrangell	24.75	140.5	.508
Yakutat	48.83	277.1	.530

Notes: See end of table

Table 2.4 (continued)

District or REAA	Average Residential Bill for 500 KWH/Mo.[1]	Electricity Bill Percent of Anchorage Monthly Bill	Autumn 1976 No. 2 Fuel Oil Price Retail $/Gal.[2]
N.W. Arctic	$75.66	429.4	.815
Bering Straits	87.70	497.7	.644
Lower Yukon	82.50	468.2	.778
Lower Kuskokwim	49.45	280.6	.616
Kuspuk	93.33	529.7	.848
S.W. Region	69.28	393.2	.662
Lake and Peninsula	87.00	493.8	.673
Aleutian Chain	50.25	285.2	.680
Pribilof Islands	---	---	---
Adak	---	---	---
Iditarod	74.47	422.6	.942
Yukon-Koyukuk	79.20	449.5	.702
Yukon Flats	93.99	533.4	.833
Upper Railbelt	---	---	.553
Delta/Greely	34.99	198.6	.582
Alaska Gateway	63.67	361.4	.563
Copper River	53.69	304.7	.543
Chatham	82.50	468.2	---
S.E. Islands	---	---	.504
Annette Island	---	---	---
Chugach	---	---	---

Table Notes:

1. Prices are the monthly average electric utility bill for 500 KWH, including fuel surcharge, where applicable. Source is Alaska Public Utilities Commission Annual Report for 1975. The number is a population weighted average for locations listed by APUC.

2. Source: Alaska Energy Office, 1976 Rural Energy Survey; Alaska Energy Office, fuel price data sheet for 1976; Standard Oil Company of California, October 1, 1976, posted prices.

An alternative index to that of the Division of Personnel for the cost of shelter is provided for a limited number of places in Table 2.5. This table was calculated using U.S. Department of Housing and Urban Development prototype housing costs published for various localities and the 1972 HUD Region IX handbook on utilities usage for subsidized housing, together with utilities price information from the Alaska Public Utilities Commission and retail fuel prices from the Alaska State Energy Office. Generalized mortgage information was provided by the loan department of First Federal Savings and Loan Association of Anchorage. These sources were combined to give a partial budget on housing shelter. The table indicates that for standardized low budget housing, allowing for certain regional differences in the type of space heating which would ordinarily be used, the cost of shelter is consistently much higher in rural areas of the state than in Anchorage. The fact that housing in some parts of the state may actually cost less can be attributed to the fact that, as mentioned above, houses are typically smaller and of lower quality than in Anchorage, or housing is subsidized, or both. Thus, the table based on standardized housing and utility usage is probably a better indicator of the differences in the costs of fixed budgets in different locations, differences which are not attributable to differences in income.

To compile the table, Alaskan HUD prototype housing construction costs for a three-bedroom, low-income unit were selected from

Table 2.5

SHELTER COST INDEX

Place	Prototype Construction Cost(1976)	Mortgage 20% Down 25 Yr. Mortgage	Monthly Mortgage[3] Principal & Interest Taxes and Insurance	Monthly[4] Fuel for Heating	Monthly[5] Lights, Cooking Refrigeration, and Hot Water	Total	Shelter Cost 1976 Index	1976 Division of Personnel Housing Index	1976 Division of Personnel Cost per Sq. Ft. Index
Anchorage[1]	$30,250	$24,200	$242.00	$20.29	$25.55	$287.84	100.0	100.0	100.0
Fairbanks[1]	32,200	25,760	257.60	49.17	48.91	355.68	123.6	95.4	148.9
Juneau[1]	29,200	23,360	233.60	40.82	33.58	308.00	107.0	98.4	98.9
Ketchikan[1]	29,100	23,280	232.80	38.57	25.55	296.92	103.2	[illegible]	[illegible]
Kodiak[1]	29,100	23,280	232.80	41.63	45.99	320.42	111.3	89.1	101.1
Sitka[1]	29,200	23,360	233.60	40.82	27.74	302.16	105.0	106.2	85.3
Kenai[1]	33,500	26,800	268.00	22.37	36.50	326.87	113.6	101.5	84.8
Yakutat[1]	33,500	26,800	268.00	42.97	71.54	382.51	132.9	71.2	77.3
Fort Yukon	55,450	44,360	443.60	45.51	95.88	584.99	203.2	87.2	98.3
Galena[2]	59,600	47,680	476.80	48.16	84.15	609.11	211.6	84.6	129.0
Nome[1]	67,100	53,680	536.80	48.60	73.00	658.40	228.7	98.2	154.1
Kotzebue[1]	67,100	53,680	536.80	50.03	103.66	690.49	239.9	69.4	137.1
Bethel	67,100	53,680	536.80	47.04	50.49	634.33	220.4	83.1	100.9
Tok	51,250	41,000	410.00	46.77	85.28	525.05	182.4	--	--
Barrow[1]	69,100	55,280	552.80	24.00	96.36	673.16	233.9	75.0	97.4
McGrath	76,750	61,400	614.00	78.24	67.83	758.07	263.4	72.6	100.0
Cordova[1,6]	30,250	24,200	242.00	42.19	40.15	324.34	112.7	110.5	59.1
Dillingham[1,6]	67,100	53,680	536.80	47.06	84.46	668.32	232.2	84.8	63.6
Haines[1,6]	29,200	23,360	233.60	40.84	44.82	319.26	110.9	81.7	95.9
Nenana[6]	32,200	25,760	257.60	49.22	35.70	342.52	119.0	70.4	72.3
Petersburg[6]	29,100	23,280	232.80	39.83	--	--	--	--	--
Valdez[1,6]	30,250	24,200	242.00	41.38	66.43	349.81	121.5	91.0	120.3
Wrangell[1,6]	29,100	23,280	232.80	41.30	36.14	310.24	107.8	104.0	65.4
Mt. Village-Emmonak[6]	67,100	53,680	536.80	75.31	84.15	696.26	241.9	70.2	63.6
Cold Bay[1]	67,100	53,680	536.80	45.93	73.36	656.09	227.9	94.5	19.5
Tanana[6]	76,750	61,400	614.00	60.09	62.22	736.31	255.8	68.0	64.5

Notes to Table 2.5

1. Has a water utility

2. Using AVEC electricity rate for general area

3. One percent of mortgage loan. It will vary slightly by location due to differences in property taxes. The base is Anchorage, which is at the high end. Insurance is based on fire and extended coverage on the building.

4. Fuel is No. 2 oil, except Anchorage, Kenai, and Barrow, where it is gas. Prices: Alaska Energy Office, Standard Oil Company

5. Heat use based on the formula:

$$\text{Fuel Units Consumed} = \frac{\text{Heat Loss} \times \text{Annual Degree Days} \times \text{Use Factor}}{\text{Btu per Fuel Unit} \times \text{Design Range} \times 12}$$

Prices from Alaska Public Utilities Commission, Annual Report, Dec. 31, 1975.

6. Heating degree days are estimates to the nearest 50, figured from reporting weather stations as follows:

Cordova - Average of Anchorage, Yakutat, Kodiak
Dillingham - King Salmon used
Haines - Juneua used
Nenana - Fairbanks used
Wrangell - Average of Ketchikan and Annette
Mt. Village, Emmonak - Average of both stations
Tanana - Fairbanks used

the June 9, 1976, Federal Register. These costs were the basis for mortgage interest and principal payments, property taxes, and insurance. It is recognized that the BLS budget shelter cost series presumes a purchase of a house on a lot (about which no price information was available) and cost of all utilities, so Table 2.5 is at best a partial index. In addition, shelter costs for homeowner families in the BLS index are based on mortgages for a house purchased six years previous to the index date, and interest rates based on mortgage rates available at that time. While the index in Table 2.5 is based on current construction costs and mortgage rates, and thus overestimates cost to some extent, it at least has a consistent age and housing quality base, which is not true of the Personnel and Labor Relations survey. The other drawbacks of the index based on HUD prototype data are that it relates to low-income, rather than moderate income families, and that it ignores a portion of shelter costs for renters, who make up 25 percent of the moderate income families in the BLS index. No information is available by location on free market costs of rental housing. The Division of Personnel survey does not separate market rents from subsidized rents; and HUD and the Alaska State Housing Authority, who also subsidize rents, do not systematically determine free market rents for standardized dwellings in a way which meets the needs of this study.

Mortgages in Alaska are typically 25-30 year mortgages, with about 20 percent downpayment for a standard mortgage, 9 to 9½ percent

simple annual interest on the declining balance, and 1 to 1½ percent mortgage loan fee. For such mortgages, a reasonable rule of thumb is that the monthly payment for principal, interest, taxes, and insurance will be about one percent of the amount of the loan. To this was added the estimated costs of electric utilities, where available, based on a three-bedroom, low-income house of the type used to estimate construction cost, heated with oil (gas in Anchorage, Kenai, and Barrow), and whose hot water, refrigeration, cooking, and lights were supplied by electricity. Hot water usage was adjusted downward by 50 percent in those places not served by a water utility, based on discussions with Anchorage HUD personnel. Heat loss formulas in the Region IX HUD publication were adjusted for Alaskan housing and insulation on the same basis. It should be emphasized that these are costs for a standard low-income unit of about 700 square feet. Total costs for larger homes would be much higher, and the index relationships, which are generally representative, would change somewhat on moderate income housing, due to differences in electricity and fuel used, and higher mortgage, tax, and insurance payments.

Transportation

The cost of transportation in various parts of the state outside of the main highway system is a difficult part of the budget to establish. The assumption is made that a typical family would

operate an automobile conforming to BLS standards for local transportation in those places with direct access to the major highway system, at costs to the family the same as at Anchorage except for gasoline. An attempt was made to see if other costs of operating varied by location through Alaska Automobile Association but this proved not feasible.[20] For moderate budget families, it is likely that yearly expenditures will include the equivalent of one or two air fares for each family member to Anchorage, Fairbanks, Juneau, or Ketchikan. For places near Anchorage and Fairbanks along the highway system in the Southcentral and Fairbanks-Alaska Highway area, the assumed trips are made more frequently, and by automobile. During these trips, the family would do some major shopping and take care of medical and dental work. Adult air fares are shown in Table 2.6.

In areas where automobiles do not provide significant local transportation, annual transportation costs are assumed to include the operation of both a snowmobile and a boat north and west of the Alaska Range, but only a boat in the Aleutians and the Southeast. The total transportation cost for a BLS family of four for one year based on the above assumptions is shown in Table 2.7 for at least one location in each school district of the state.

Table 2.6

Alaskan Air Fares and Air Freight Rates, July 1976

Place	Alaska Destination in Region	Round Trip Air Fare to Alaska Destination	Round Trip Air Fare to Seattle	Air Freight Rate for 100 lb. Shipment from Seattle
Anchorage	--	$ --	$246.15	$ 28.05
Bristol Bay (King Salmon)	Anchorage	99.73	345.88	37.45
Cordova	Anchorage	55.00	245.39	29.20
Craig	Ketchikan	44.44	195.13	33.40
Dillingham	Anchorage	117.72	363.87	39.40
Fairbanks	--	--	265.61	28.05
Galena	Fairbanks	89.72	355.33	39.35
Haines	Juneau	64.80	250.48	45.60
Hoonah	Juneau	46.00	231.68	43.60
Hydaburg	Ketchikan	48.00	198.69	31.45
Juneau	--	--	185.68	23.60
Kake	Ketchikan	115.86	220.74	37.85
Kenai	Anchorage	30.00	276.15	39.05
Ketchikan	--	--	150.69	19.45
King Cove	Anchorage	325.73	571.88	66.05
Klawock	Ketchikan	48.00	198.69	31.45
Kodiak	Anchorage	90.88	284.43	26.95 (summer)
Mat-Su (Palmer)	--	--	(Anc)246.15	(Anc)28.05
Nenana	--	--	(Fbk)265.61	(Fbk)28.05
Nome	Fairbanks	147.72	415.97	47.95
N. Slope (Barrow)	Fairbanks	145.74	410.50	51.55
Pelican	Juneau	85.44	271.12	45.60
Petersburg	Ketchikan	75.86	180.74	25.85
Selawik	Fairbanks	201.43	467.04	54.95
Sitka	Juneau	57.74	174.74	25.85
Skagway	Juneau	69.12	254.80	45.60
St. Marys	Anchorage	145.74	391.89	42.40
Unalaska	Anchorage	381.74	573.22	67.05
Valdez	Anchorage	45.00	291.15	48.05
Wrangell	Ketchikan	67.60	218.29	44.70
Yakutat	Juneau	71.74	257.42	27.50

Source: Alaska Airlines, Wien Air Alaska, Reeve Aleutian Airways, Polar Airlines, and Western Airlines.

Table 2.6 (continued)

Place	Alaska Destination in Region	Round Trip Air Fare to Alaska Destination	Round Trip Air Fare to Seattle	Air Freight Rate for 100 lb. Shipment from Seattle
N.W. Arctic (Kotzebue)	Fairbanks	$147.72	$415.97	$ 47.95
Bering St. (Nome)	Fairbanks	147.72	415.97	47.95
Lower Yukon (Mt. Village)	Anchorage	195.46	441.61	47.40
Lower Kuskokwim (Bethel)	Anchorage	133.72	379.87	42.05
Kuspuk (Aniak)	Anchorage	131.74	377.89	39.10
S.W. Region (Dillingham)	Anchorage	117.72	363.87	40.10
Lake & Peninsula (King Salmon)	Anchorage	99.73	345.88	37.45
Aleutian Chain (Cold Bay)	Anchorage	295.73	541.88	66.05
Pribilof Islands (St. Paul)	Anchorage	409.73	655.88	71.05
Adak (Adak)	Anchorage	437.72	626.12	73.05
Iditarod (McGrath)	Fairbanks	75.73	317.73	35.60
Yukon-Koyokuk (Nenana-Tanana)	--	--	(Fbk)265.61	(Fbk)28.05
Yukon Flats (Ft. Yukon)	Fairbanks	60.00	325.61	42.05
Upper Railbelt (Clear)	--	--	(Fbk)265.61	(Fbk)28.05
Delta/Greely (Big Delta)	Fairbanks	78.00	343.61	48.05
Alaska Gateway (Tok)	Fairbanks	78.00	343.61	48.05
Copper River (Glennallen)	Anchorage	45.00	291.15	48.05
Chatham (Angoon)	Juneau	58.00	243.68	45.60
S.E. Islands (Ketchikan)	--	--	150.69	19.45
Annette Island (Metlakatla)	Ketchikan	28.00	178.69	27.50
Chugach (Whittier)	--	--	(Anc)246.15	(Anc)28.05

Source: Alaska Airlines, Wien Air Alaska, Reeve Aleutian Airways, Polar Airlines, and Western Airlines.

Table 2.7

Transportation Cost Index, 1976[1]

District or REAA and Place	Annual Local Transportation Cost, Less Gasoline	Annual Gasoline Cost (auto only)[3]	Annual Intercity Transportation Cost[4]	Total Transportation Cost	Total Cost as a Percent of Anchorage
Anchorage	$1,196[2]	$469	$ 0	$1,665	100.0
Bristol Bay (King Salmon)	1,196	430	698	2,324	139.6
Cordova	1,196	469	385	2,050	123.1
Craig	1,196	364	311	1,871	112.4
Dillingham	1,196	500	824	2,520	151.4
Fairbanks	1,196	508	0	1,704	102.3
Galena	925	0	628	1,553	93.3
Haines	1,196	469	454	2,119	127.3
Hoonah	1,196	469	322	1,987	119.3
Hydaburg	1,196	469	336	2,001	120.2
Juneau	1,196	469	0	1,665	100.0
Kake	1,196	469	811	2,476	148.7
Kenai	1,196	492	210	1,898	114.0
Ketchikan	1,196	467	0	1,663	99.9
King Cove	325	0	2,280	2,605	156.5
Klawock	1,196	364	336	1,896	113.9
Kodiak	1,196	470	636	2,302	138.3
Matanuska-Susitna (Palmer/Talkeetna)	1,196	475	216[5]	1,887	113.3
Nenana	1,196	515	288[6]	1,999	120.1
Nome	1,196	506	1,034	2,736	164.3
North Slope (Barrow)	925	0	1,020	1,945	116.8
Pelican	325	0	598	923	55.4
Petersburg	1,196	469	531	2,196	131.9
Selawik	925	0	1,410	2,335	140.2
Sitka	1,196	469	404	2,069	124.3
Skagway	1,196	469	484	2,149	129.1
St. Marys	925	0	1,020	1,945	116.8
Unalaska	1,196	430	2,672	4,298	258.1
Valdez	1,196	469	315	1,980	118.9
Wrangell	1,196	469	473	2,138	128.4
Yakutat	325	0	502	827	69.1

Notes: See end of table.

Table 2.7 (continued)

District or REAA and Place	Annual Local Transportation Cost, Less Gasoline	Annual Gasoline Cost (auto only)	Annual Intercity Transportation Cost	Total Transportation Cost	Total Cost as a Percent of Anchorage
N.W. Arctic (Kotzebue)	$ 925	$ 0	$1,034	$1,959	117.7
Bering Straits (Nome)	925	0	1,034	1,959	117.7
Lower Yukon (Mt. Village)	925	0	1,368	2,293	137.7
Lower Kuskokwim (Bethel)	925	0	936	1,861	111.8
Kuspuk (Aniak)	925	0	922	1,847	110.9
S.W. Region (Dillingham)	925	0	824	1,749	105.0
Lake and Peninsula (King Salmon)	925	0	698	1,623	97.5
Aleutian Chain (Cold Bay)	325	0	2,070	2,395	143.8
Pribilof Islands (St. Paul)	925	0	2,868	3,793	227.8
Iditarod (McGrath)	925	0	530	1,455	87.4
Yukon-Koyukuk (Nenana/Tanana)	925	0	288	1,721	103.4
Yukon Flats (Ft. Yukon)	925	0	420	1,345	80.8
Upper Railbelt (Clear)	1,196	508	480[7]	2,184	131.2
Delta Greely (Big Delta)	1,196	515	546	2,257	135.6
Alaska Gateway (Tok/Northway)	1,196	529	546	2,271	136.4
Copper River (Glennallen)	1,196	515	315	2,026	121.7
Chatham (Angoon)	325	406	406	731	43.9
S.E. Islands (Ketchikan)	1,196	467	0	1,663	99.8
Annette Island (Metlakatla)	1,196	467	196	1,859	111.7
Chugach Schools (Whittier)	1,196	469	850[8]	2,515	151.1

Notes: See end of table.

Notes to Table 2.7

1. Based on moderate income family of four.

2. Autumn 1975 Intermediate Income transportation cost, inflated by the ratio of July 1976 to October 1975 Anchorage CPI. For locations with less than one-fourth the statewide auto registrations to population average, an annual cost of $925 for a snowmobile and boat, or $325 for only a boat was assumed. See Robert Nathan Associates methodology listed in sources.

3. Gasoline cost is figured on basis of 15 miles per gallon, 9,918 miles per year, and local gasoline prices. Gasoline use is based on BLS intercity index information.

4. Intercity transportation cost is in most cases based on intercity air fares for the equivalent of 7 annual adult fares split among 4 people, one of which qualifies for youth rates. Since Anchorage intermediate budgets allow for some intercity air travel, in most cases the cost listed is the additional air travel over and above Anchorage costs.

5. Based on monthly automobile trips to Anchorage, round trip of 90 miles, at 20 cents per mile.

6. Based on monthly automobile trips to Fairbanks, 120 miles round trip, at 20 cents per mile.

7. Based on monthly automobile trips to Fairbanks, 200 miles round trip, at 20 cents per mile.

8. Based on monthly automobile trips to Anchorage, 90 mile round trip, 20 cents per mile, plus $30.80 charges for the automobile and driver hauled on the railroad between Whittier and Portage, and $22 for 3 passengers.

Sources: Airlines involved; Bureau of Labor Statistics, "BLS Revises Estimates for Urban Family Budgets and Comparative Indexes for Selected Urban Areas, Autumn 1975;" Alaska Department of Highways; Alaska Division of Energy and Power Development; Robert Nathan Associates, The Cost of Living in Alaska and Federal Poverty Guidelines.

Clothing and Furnishings

Clothing prices in Alaska may vary by location; however, there is little information on this phenomenon. If ordered in small quantities through a mail-order catalog and delivered by parcel post, clothing items ordered would have the same total price, including shipping, in the "bush" as in Anchorage. The hypothetical family of four is assumed to take maximum advantage of this feature of Alaskan mail service. Items too heavy to send parcel post, such as household appliances, would often go by air freight, and the cost of very heavy, large orders would include the charge for this service, which is very high in the remote parts of the state. Many of the standard household furnishings listed in the BLS housing budget are light items, such as towels, sheets, and small appliances which could go by mail, or be carried back as luggage on annual or semi-annual shopping trips. The standard assumed life on large appliances in the BLS budget is quite long, and so the annual cost is quite a small proportion of the total budget. In autumn of 1975 in Anchorage, total household furnishings and operations amounted to only 8.8 percent of the total intermediate budget consumption, and major appliances are a small portion of this total. Household operations expenditures consist mostly of expenditures for cleaning and paper supplies which trade through the same sorts of retail outlets as canned foodstuffs, and which can expect similar markups over Anchorage in similar localities.[21]

To get a clothing and household furnishings total, it is assumed that clothing costs are the same as Anchorage, household furnishings costs bear the same relationship to Anchorage costs as relative freight rates on a 100 pound, $200 order shipped to each location, and household operations costs bear the same relationship to Anchorage costs as does the food price index. A summary of this data appears in Table 2.8.

Personal and Medical Care

The largest single component of this category of expenditure consists of health insurance. An attempt was made through Blue Cross of Washington-Alaska to see if insurance rates, doctors' and dentists' office calls, and other related medical expenses vary systematically according to locality. Blue Cross was unable to develop the information since variation in the types of plans available and the groups to which they are sold varies so widely that locality-to-locality differences were not discernable. Therefore, average family medical costs are assumed constant for all areas of the state. Differences in such costs due to transportation--e.g., the cost of taking a plane into Anchorage, Juneau, Fairbanks, or Ketchikan for major medical work--are subsumed under transportation costs for annual trips. Personal care costs in the Bureau of Labor Statistics family budget series are dominated by the costs of haircuts and toilet articles. The former probably do not vary

Table 2.8

Air Freight Costs and Household Furnishings and Operations Indices, 1976

Place	Seattle-Alaska 100 Pound Air Freight Cost of Shipping	Cost of $200 Item with Shipping	Index Percent of Anchorage	Household Operations Index Percent of Anchorage
Anchorage	$28.05	$228.05	100.0	100.0
Bristol Bay (King Salmon)	37.45	237.45	104.1	---
Cordova	29.20	229.20	100.5	123.5
Craig	33.40	233.40	102.3	---
Dillingham	39.40	239.40	105.0	141.6
Fairbanks	28.05	228.05	100.0	116.8
Galena	39.35	239.35	105.0	160.0
Haines	45.60	245.60	107.7	105.1
Hoonah	43.60	243.60	106.8	---
Hydaburg	31.45	231.45	101.5	---
Juneau	23.60	223.60	98.0	95.7
Kake	37.85	237.85	104.3	---
Kenai	39.05	239.05	104.8	110.8
Ketchikan	19.45	219.45	96.2	100.9
King Cove	66.05	266.05	116.7	---
Klawock	31.45	231.45	101.5	---
Kodiak	26.95	226.95	99.5	114.8
Matanuska-Susitna (Palmer)	28.05	228.05	100.0	107.3
Nenana	28.05	228.05	100.0	116.0
Nome	47.95	247.95	108.8	160.4
North Slope (Barrow)	51.55	251.55	110.3	165.4
Pelican	45.60	245.60	107.7	---
Petersburg	25.85	225.85	99.0	99.8
Selawik	54.95	254.95	111.8	---
Sitka	25.85	225.85	99.0	101.3
Skagway	45.60	245.60	107.7	---
St. Marys	42.40	242.40	106.3	---
Unalaska	67.05	267.05	117.1	---
Valdez	48.05	248.05	108.8	113.0
Wrangell	44.70	244.70	107.3	100.4
Yakutat	27.50	227.50	99.8	133.0

Source: Alaska Airlines, Wien Air Alaska, Reeve Aleutian Airways, Polar Airlines, and Western Airlines.

Table 2.8 (continued)

Place	Seattle-Alaska 100 Pound Air Freight Cost of Shipping	Cost of $200 Item with Shipping	Index Percent of Anchorage	Household Operations Index Percent of Anchorage
N.W. Arctic (Kotzebue)	$47.95	$247.95	108.7	142.9
Bering Straits (Nome)	47.95	247.95	108.7	160.4
Lower Yukon (Mt. Village)	47.40	247.40	108.5	160.6
Lower Kuskokwim (Bethel)	42.05	242.05	106.1	148.0
Kuspuk (Aniak)	39.10	239.10	104.8	---
S.W. Region (Dillingham)	40.10	240.10	105.3	141.6
Lake and Peninsula (King Salmon)	37.45	237.45	104.1	---
Aleutian Chain (Cold Bay-Sand Point)	66.05	266.05	116.7	116.4
Pribilof Islands (St. Paul)	71.05	271.05	118.9	---
Adak (Adak)	73.05	273.05	119.7	---
Iditarod (McGrath)	35.60	235.60	103.3	164.0
Yukon-Koyukuk (Nenana-Tanana)	28.05	228.05	100.0	135.8
Yukon Flats (Ft. Yukon)	42.05	242.05	106.1	142.9
Upper Railbelt (Clear)	28.05	228.05	100.0	---
Delta/Greely (Big Delta)	48.05	248.05	108.8	---
Alaska Gateway (Tok)	48.05	248.05	108.8	---
Copper River (Glennallen)	48.05	248.05	108.8	---
Chatham (Angoon)	45.60	245.60	107.7	---
S. E. Islands (Ketchikan)	19.45	219.45	96.2	100.9
Annette Island (Metlakatla)	27.50	227.50	99.8	---
Chugach (Whittier)	28.05	228.05	100.0	---

Source: Alaska Airlines, Wien Air Alaska, Reeve Aleutian Airways, Polar Airlines, and Western Airlines.

systematically by community, and the latter probably follow the index of prices of prepared foods, since they have many of the same storage and handling characteristics and are distributed in many of the same outlets.[22]

Recreation, Reading, Education, and Other Miscellaneous Expenses

There is so little information on location differentials in these items' cost that recreation, reading, and education were excluded from further consideration, and the budgets were refigured excluding these items. Other items of miscellaneous expense include allowances for gifts and contributions, life insurance, and occupational expenses. These were also excluded.

Social Security, Disability Payments, and Income Taxes

These payments are more than proportional to nominal dollar income, with the exception that there is a ceiling on total social security payments at $825 (1975 Federal tax law). Therefore, the higher is the nominal income of persons, the greater is this cost. The BLS statistic includes Social Security, Federal, state, and local income taxes, and unemployment insurance payments where required by state law. Tax costs of the Alaskan family of four could be most usefully related to the incomes of teachers, since a substantial portion of school operating funds are allocated to payments of wages and salaries of staff. Therefore, for each

school district, income taxes were figured on the average instructional staff 1975-76 wage for each school district, using 1975 Federal and state tax laws.[23] Due to small changes in the standard deductions and credits, the 1976 tax rules would yield slightly different results. The BLS family of four has only wage and salary income from the husband, files a joint return, and takes the standard deduction. Homeowner families in Alaska might well reduce their tax burden by itemizing; however, the basis of computation used in this report has the advantage of computational simplicity and of following the BLS format.[24] The average instructional salary and income tax bill for the corresponding bracket are shown in Table 2.9 Note that average salaries are lower in rural areas.

Family Budgets vs. Instructional Unit Allotments

Since the Instructional Unit Allotments are apparently based on the supposition that they reflect the higher "costs of living" in communities either not connected to surface transportation or in relatively remote areas of the state, and that this higher "cost of living" is associated with higher costs of school operations, it is worthwhile to check the Instructional Unit Allotment index against the actual or probable differentials in "average" family budget costs for each area to see if the consumption cost index and Instructional Unit Allotment bear any resemblance to each other. The summary comparison is shown in Table 2.10.

Table 2.9

Hypothetical Federal and State Income Taxes Paid by Instructional Staff on Average Incomes, 1975-76 Fiscal Year

Place	Average Annual Salary 1975-76 School Year	Federal Income Tax Owed 1975 Basis	State Income Tax 1975 Basis	Total Federal and State Income Tax	Total as a Percentage of Anchorage
Anchorage	$20,556	$2,879	$330	$3,209	100.0
Bristol Bay B.	18,642	2,401	288	2,689	83.8
Cordova	18,761	2,430	293	2,723	84.9
Craig	13,500	1,335	126	1,461	45.5
Dillingham	21,029	2,997	368	3,365	104.9
Fairbanks	20,465	2,856	350	3,206	99.9
Galena	18,360	2,330	279	2,609	81.3
Haines	17,793	2,188	255	2,443	76.1
Hoonah	16,820	1,968	228	2,196	68.4
Hydaburg	14,378	1,497	152	1,649	51.4
Juneau	16,637	1,928	221	2,149	67.0
Kake	18,107	2,266	271	2,537	79.1
Kenai	20,311	2,817	345	3,162	98.5
Ketchikan	19,766	2,682	326	3,008	93.7
King Cove	13,125	1,266	118	1,384	43.1
Klawock	16,649	1,931	219	2,150	67.0
Kodiak	20,823	2,946	362	3,308	103.1
Mat-Su (Palmer)	18,089	2,262	269	2,531	78.9
Nenana	18,097	2,264	269	2,533	78.9
Nome	21,174	3,034	373	3,407	106.2
North Slope (Barrow)	24,355	3,911	516	4,427	138.0
Pelican	18,120	2,270	271	2,541	79.2
Petersburg	19,236	2,549	308	2,857	89.0
Selawik	19,523	2,621	318	2,939	91.6
Sitka	19,829	2,697	328	3,025	94.3
Skagway	16,383	1,872	212	2,084	64.9
St. Marys	18,508	2,367	284	2,651	82.6
Unalaska	18,577	2,384	286	2,670	83.2
Valdez	19,473	2,608	316	2,924	91.1
Wrangell	17,481	2,114	249	2,363	73.6
Yakutat	18,170	2,282	273	2,555	79.6

Source: Annual Statistical Report, State Department of Education, based on family of four, filing joint return and taking standard deduction, 1975 tax rates.

Table 2.9 (continued)

Place	Average Annual Salary 1975-76 School Year	Federal Income Tax Owed 1975 Basis	State Income Tax 1975 Basis	Total Federal and State Income Tax	Total as a Percentage of Anchorage
N.W. Arctic (Kotzebue)	$19,871	$2,707	$330	$3,037	94.6
Bering St. (Nome)	18,211	2,293	274	2,567	80.0
Lower Yukon (Mt. Village)	19,912	2,718	331	3,049	95.0
Lower Kuskokwim (Bethel)	20,234	2,798	341	3,139	97.8
Kuspuk (Aniak)	20,886	2,962	363	3,325	103.6
S.W. Region (Dillingham)	20,110	2,768	338	3,106	96.8
Lake & Peninsula (Naknek)	19,514	2,618	318	2,936	91.5
Aleutian Chain (Cold Bay)	20,947	2,977	365	3,342	104.1
Pribilof Islands (St. Paul)	21,165	3,031	373	3,404	106.1
Adak (Adak)	19,987	2,737	333	3,070	95.7
Iditarod (McGrath)	19,198	2,790	306	3,096	96.5
Yukon-Koyukuk (Nenana)	20,101	2,765	338	3,103	96.7
Yukon Flats (Ft. Yukon)	20,605	2,891	355	3,246	101.2
Upper Railbelt (Clear)	20,245	2,801	341	3,142	97.9
Delta/Greely (Gelta Junc.)	19,554	2,628	320	2,948	91.9
Alaska Gateway (Tok)	19,807	2,692	328	3,020	94.1
Copper River (Glennallen)	19,172	2,533	306	2,839	88.5
Chatham (Angoon)	18,372	2,333	279	2,612	81.4
S.E. Islands (Ketchikan)	20,558	2,880	353	3,233	100.7
Annette Island (Metlakatla)	18,791	2,438	296	2,734	85.2
Chugach (Whittier)	22,143	3,292	407	3,699	115.3

Table 2.10

Constructing the Composite Total Consumption Index for School Districts and REAAs
1976

District or REAA and Place	Food Price Index[1]	Housing Index[2]			Transportation Index[3]	Clothing Index[4]	Personal Care Index[5]	Medical Care Index[6]	Composite Total Consumption Index[7]	Present Instructional Unit Allotments
		Shelter	Furnishings	Operations						
District Schools										
Anchorage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bristol Bay (Naknek-K. Salmon)	--	—	104.1	--	139.6	100.0	--	100.0	—	132.6
Cordova	123.5	112.7	100.5	123.5	123.1	100.0	123.5	100.0	114.8	115.0
Craig	--	—	102.3	--	112.4	100.0	--	100.0	—	107.5
Dillingham	141.6	232.2	105.0	141.6	151.4	100.0	141.6	100.0	160.0	132.56
Fairbanks	116.8	123.6	100.0	116.8	102.3	100.0	116.8	100.0	113.4	111.25
Galena	160.0	211.6	105.0	160.0	93.3	100.0	160.0	100.0	155.0	140.44
Haines	105.1	110.9	107.7	105.1	127.3	100.0	105.1	100.0	108.2	107.5
Hoonah	--	—	106.8	--	119.3	100.0	--	100.0	—	107.5
Hydaburg	--	--	101.5	--	120.2	100.0	--	100.0	—	107.5
Juneau	95.7	107.0	98.0	95.7	100.0	100.0	95.7	100.0	100.2	100.0
Kake	--	—	104.3	--	148.7	100.0	--	100.0	--	107.5
Kenai (Kenai-Seward-Seldovia-Homer)	110.8	113.6	104.8	110.8	114.0	100.0	110.8	100.0	109.6	107.5
Ketchikan	100.9	103.2	96.2	100.9	99.9	100.0	100.9	100.0	101.0	100.0
King Cove	--	—	116.7	--	156.5	100.0	--	100.0	--	132.56
Klawock	--	—	101.5	--	113.9	100.0	--	100.0	—	107.5
Kodiak	114.8	111.3	99.5	114.8	138.3	100.0	114.8	100.0	112.6	107.5
Mat-Su (Palmer)	107.3	100.0	100.0	107.3	113.3	100.0	107.3	100.0	104.0	103.75
Nenana	116.0	119.0	100.0	116.0	120.1	100.0	116.0	100.0	113.5	133.75
Nome	160.4	228.7	108.8	160.4	164.3	100.0	160.4	100.0	167.5	140.44
North Slope (Barrow)	165.6	233.9	110.3	165.6	116.8	100.0	165.6	100.0	166.3	140.44
Pelican	--	—	107.7	--	55.4	100.0	--	100.0	—	112.88
Petersburg	--	—	99.0		131.9	100.0		100.0	--	103.75
Selawik	--	—	111.8	--	140.2	100.0	--	100.0	—	140.44
Sitka	101.3	105.0	99.0	101.3	124.3	100.0	101.3	100.0	104.2	103.75

85

86

District or REAA and Place	Food Price[1] Index	Housing Index[2] Shelter	Furnishings	Operations	Transportation[3] Index	Clothing[4] Index	Personal[5] Care Index	Medical[6] Care Index	Composite[7] Total Consumption Index	Present Instructional Unit Allotments
Skagway	103.4	--	107.7	103.4	129.1	100.0	103.4	100.0	—	107.75
St. Marys	179.0	—	106.3	179.0	116.8	100.0	179.0	100.0	—	136.50
Unalaska	--	—	117.1	--	258.1	100.0	--	100.0	—	132.56
Valdez	113.0	121.5	108.8	113.0	118.9	100.0	113.0	100.0	113.5	115.00
Wrangell	100.4	107.8	107.3	100.4	128.4	100.0	100.4	100.0	105.6	103.75
Yakutat	133.0	132.9	99.8	133.0	69.1	100.0	133.0	100.0	118.9	112.88
REAAs										
Northwest (Kotzebue)	142.9	239.9	108.7	142.9	117.7	100.0	142.9	100.0	159.6	140.44
Bering Straits (Nome-Rural Areas)	160.4	228.7	108.7	160.4	117.7	100.0	160.4	100.0	162.9	132.56
Lower Yukon (Mt. Village-Hooper Bay-Emmonak)	160.6	241.9	108.5	160.6	137.7	100.0	160.6	100.0	168.8	136.50
Lower Kuskokwim (Bethel)	148.0	220.4	106.1	148.0	111.8	100.0	148.0	100.0	155.0	136.50
Kuspuk (Aniak)	--	—	104.8	--	110.9	100.0	--	100.0	—	140.44
S.W. Region (Dillingham-Rural Areas)	141.6	232.2	105.3	141.6	105.0	100.0	141.6	100.0	155.4	132.56
Lake & Peninsula (Naknek-King Salmon)	--	—	104.1	--	97.5	100.0	--	100.0	—	132.56
Aleutian Chain (Cold Bay-Sand Point)	116.4	227.9	116.7	116.4	143.8	100.0	116.4	100.0	—	132.56
Pribilof Islands (St. Paul)	--	—	118.9	--	227.8	100.0	--	100.0	—	132.56
Adak (Adak)	--	—	119.7	--	—	100.0	--	100.0	—	132.56
Iditarod (McGrath)	164.0	263.4	103.3	164.0	87.4	100.0	164.0	100.0	171.1	140.44
Yukon-Koyukuk (Nenana-Tanana)	135.8	255.8	100.0	135.8	103.4	100.0	135.8	100.0	159.7	140.44
Yukon Flats (Ft. Yukon)	142.9	203.2	106.1	142.9	80.8	100.0	142.9	100.0	144.9	140.44
Upper Railbelt (Clear-Cantwell)	--	—	100.0	--	131.2	100.0	--	100.0	—	133.75
Delta/Greely (Delta Junction)	--	—	108.8	--	135.6	100.0	--	100.0	—	111.25

District or REAA and Place	Food Price[1] Index	Housing Index[2] Shelter	Furnishings	Operations	Transportation[3] Index	Clothing[4] Index	Personal[5] Care Index	Medical[6] Care Index	Composite[7] Total Consumption Index	Present Instructional Unit Allotments
Alaska Gateway (Tok)	--	182.4	108.8	--	136.4	100.0	--	100.0	--	111.25
Cooper River (Glennallen-Copper Center)	--	—	108.8	--	122.7	100.0	--	100.0	--	115.00
Chatham (Angoon)	--	—	107.7	--	43.9	100.0	--	100.0	--	107.50
S.E. Islands (Ketchikan)	100.9	103.2	96.2	100.9	99.9	100.0	100.9	100.0	101.0	105.00
Annette Island (Metlakatla)	--	—	99.8	--	111.7	100.0	--	100.0	--	105.00
Chugach (Whittier)	--	—	100.0	--	151.1	100.0	--	100.0	--	115.00

Notes: see next page.

Table 2.10. Composite Total Consumption Index

Notes to Table 2.10

1. Source: Alaska Division of Personnel and Labor Relations, Survey of Food and Housing Costs (Draft), November, 1976.

2. The housing index is based on three component parts: shelter (3 bedroom house mortgage principal and interest at 9 percent on 25-year standard mortgage, taxes, insurance, heating fuel, and electricity); furnishings (based on an annual $200/100 pound mail order, shipped from Seattle by air freight); and household operations (cleaning supplies purchased through local retail food outlets). Sources of data: U.S. Department of Housing and Urban Development, "Low Rent Public Housing Prototype Cost Limits" Federal Register, Wednesday, June 9, 1976; U.S. Department of Housing and Urban Development, San Francisco Regional Office, Selection of Utilities for Subsidized Housing in Region IX, December 1972 (Adjusted to Alaska conditions by the Anchorage HUD staff); Alaska Public Utilities Commission Annual Report, December 1975; Alaska Energy Office, Standard Oil Company of California, First Federal Savings and Loan of Anchorage, relevant airlines (see note 3).

3. Local transport is based on local operation of a car; alternatively a snowmobile and/or boat. (Source: ratio of 4 wheel, powered vehicles to population from Alaska Department of Highways and Department of Community and Regional Affairs, Alaska Taxable 1975.) Intercity transportation assumes the 1976 equivalent of two trips by air per year for three adults and one child to the nearest major regional center: Anchorage, Fairbanks, Juneau, Ketchikan. Sources: Alaska Airlines, Wien Air Alaska, Reeve Aleutian Airways, Western Airlines, Polar Airlines. Exceptions were monthly car trips from Nenana, Clear, Palmer, and Whittier.

4. Clothing costs are based on mail order costs from Seattle, delivered parcel post. Source: Sears, Roebuck and Company.

5. Personal care is dominated by costs of toilet articles sold through retail grocery chains.

6. Medical care costs are dominated by medical insurance costs, which do not systematically vary by location in Alaska. Source: Blue Cross Washington-Alaska.

7. The weights attached to each index are based on the BLS budget proportions of an Anchorage intermediate income family of 4. The adjusted weights, as a percent of consumption, are:

Food	.305
Shelter	.295
Furnishings	.052
Operations	.041
Transport	.100
Clothing	.089
Personal Care	.031
Medical Care	.086
Total	.999

Source: U.S. Bureau of Labor Statistics, BLS Revised Estimates for Urban Family Budgets and Comparative Indexes for Selected Urban Areas, Autumn, 1975.

Indices Prepared by State Government

The index which is the basis for the Instructional Unit Allotments was prepared by the Department of Community and Regional Affairs in 1975 (hereafter, the CRA Index), based upon the findings of Department of Administration's Division of Personnel and Labor Relations in their salary survey of December, 1974, Department of Administration information on costs of providing services, and supplementary information. Community and Regional Affairs, in a February, 1974 study, reported some of the various cost of living indicators which existed at the time, including housing and food prices, Division of Personnel's information on actual food and housing expenditures, heating fuel costs, and charges for air and water freight. In addition, they discussed the U.S. Army and U.S. Air Force construction cost indices and U.S. Department of Housing and Urban Development prototype housing costs, which they felt were indicators of government operations costs, although not directly a part of the cost of living for salaried employees. Their findings are shown in Table 2.11. Although it is not entirely clear whether a formal method was used to combine the Division of Personnel salary survey with the information developed in the 1974 Community and Regional Affairs study (if, indeed the study was used at all to prepare the CRA Index), the index which resulted bears little resemblance to the constant-consumption-weight "cost of living" index compiled in Table 2.10 for this report. Further, if

Table 2.11

SUMMARY OF COMPARATIVE COST INDEXES

ALASKA HOUSE DISTRICTS[1]

District	State Salary Schedules[2]	Food/ Housing Index[3]	Military Construction Costs[4]	Low Rent Housing Prototype Costs[5]	Heating Oil Costs[6]	Seattle/Anc Air Freight Basic Rate[7]	CRA Index[8]
Aleutian Islands	1.3	1.0	1.8	n/a	1.0	1.9	1.2625
Anchorage	1.0	1.0	1.0	1.0	1.0	1.0	1.000
Barrow	1.4	1.2	1.9	2.3	1.5	1.6	1.1375
Bethel	1.3	1.4	1.9	2.4	1.2	1.5	1.300
Dillingham	1.3	1.3	1.9	2.4	1.2	1.4	1.2625
Fairbanks	1.1	1.1	1.2	1.4	1.3	1.2	1.150
Fort Yukon	1.4	1.3	1.8	2.0	1.8	1.6	1.1375
Galena	1.4	1.2	1.9	2.5	1.4	1.4	1.3375
Haines	1.1	1.1	n/a	1.1	1.0	1.2	1.075
Hooper Bay	1.3	1.3	2.0	2.4	1.8	1.7	1.300
Juneau	1.0	1.1	1.0	1.0	1.0	0.9	1.000
Kenai	1.1	1.1	1.2	1.1	1.0	1.2	1.075
Ketchikan	1.0	1.0	1.4	1.0	1.0	0.9	1.000
Kodiak	1.1	1.2	1.5	1.0	1.0	1.5	1.075
Nome	1.3	1.2	1.7	2.2	1.2	1.4	1.265
Palmer	1.0	1.0	n/a	n/a	1.1	n/a	1.0375
Seward	1.1	1.0	1.2	n/a	1.0	n/a	1.075
Sitka	1.0	1.1	n/a	1.0	1.0	0.9	1.0375
Valdez	1.2	1.1	1.2	n/a	1.1	1.1	1.1875
Wrangell	1.0	1.0	n/a	n/a	1.0	1.2	1.0375

1/Anchorage costs = 1.0. House Districts are those in existence prior to 1971 Court-ordered reapportionment.

2/State salary scales (developed by the Department of Administration, Division of Personnel).

3/Food and housing combined index (developed by the Department of Administration, Division of Personnel, from several sources).

4/Empirical cost estimates for military construction (developed by the U.S. Army and U.S. Air Force).

5/Low rent public housing prototype costs (developed by the U.S. Department of Housing and Urban Development).

6/Fuel costs (heating oil) as delivered to distributors (from information supplied by the Standard Oil Company of California.

7/Air freight rates from Seattle (from information supplied by Alaska Airlines and Wien Consolidated Airlines).

8/CRA Index: Department of Community and Regional Affairs "Summary of Administrative Changes," 1975.

Source: "Regional Cost Indexes, Alaska House Districts," prepared by the Department of Community and Regional Affairs, Division of Community Planning, February 1974.

the 1974 Community and Regional Affairs study was used, then the CRA Index also diverges in some cases from the "cost of living" as determined by food and housing costs alone by Division of Personnel (although the averaging of actual expenditures and prices for food, and the arbitrary weights used to average cost, size, and quality of housing make the Division of Personnel index bear an unknown relationship to actual cost-of-living differentials). Finally, the 1975 CRA Index violates an observation made on page 2 of the 1974 CRA study that

> The relative cost of providing the range of municipal facilities and services in different parts of the state doubtless shows a greater regional disparity than do personal living costs. This is because many basic facilities and services must be drastically modified in order for them to function in some areas and because capital outlays for construction and equipment purchases normally form a much higher proportion of the municipal than the personal budget.

The CRA Index which was actually adopted seems to show less statistical variation than either the cost of living indicators or the cost of operations indicators shown in Community and Regional Affairs 1974 report. This bias is serious enough when applied to the traditional school districts. However, when applied on an area basis to village schools in the REAA's, based on costs at the administrative center, the system is likely to break down completely. It is precisely those parts of the school budget dedicated to operations and maintenance, for which private citizens spend a relatively small portion of their budget, which appear to cause

the differences in "cost of living" as measured by the CRA Index, and the actual costs of operating schools in bush villages. If the goal of the Foundation Program is to provide approximately equal programs for students in all parts of Alaska, allowing for differences in operating costs, a different method is worth considering.

Private Pay Differentials

It is interesting for purposes of comparison with state adjustments to note how pay differentials of private firms and unions differ from the state wage scale. A sample of firms doing business at several localities in Alaska was asked how their wage scales differed by location for the same job. The results appear in Table 2.12 for the firms surveyed. There is no obvious pattern of attempting to match "cost-of-living" differences. The two banks seem to come the closest, if one ignores the one company which follows the state's differentials. Since the bargaining power of employee and employer, the relative perceived costs of living, conditions of employment, and the qualifications of employees must be taken into account, private wage rates probably provide a very poor guide to actual cost-of-living differentials. The state's differentials appear in Table 2.13.

Table 2.12

Private Company Pay Differentials for
Alaskan Locations, January 1977

Company	Scale Percent Above Anchorage	Locations Affected	Notes
Yukon Office Supply	20%	Fairbanks	All employees
	State's Differentials	Ketchikan, Sitka, Juneau, Kenai	All employees
National Bank of Alaska	14%	Fairbanks, Glennallen, Valdez	Non-managerial
	15%	Fairbanks, Glennallen, Valdez	Managerial
	7%	Cordova, Juneau, Dillingham	All employees
	0%	Skagway, Ketchikan, Wrangell, Sitka, Tongass, Metlakatla, Petersburg, Soldotna, Homer, Kenai, Kodiak, Wasilla	All employees
RCA	50¢ per hour	Fairbanks	
	5%	Skagway, Tok, Delta Junction, Glennallen, Cordova, Valdez, Talkeetna, Kenai, Haines	
	12%	Bethel, Cold Bay, King Salmon, Kotzebue, Unalaska, Nome, Dillingham, McGrath	
	0%	Juneau, Ketchikan, Deadhorse* All other locations*	*Several special benefits such as housing are provided at these locations
Safeway Stores	5%	Fairbanks	
Alaska National Bank	13%	Fairbanks	
	19.2%	Barrow, Deadhorse, Delta Junction, Kotzebue, Tok, Nome, Nenana, Valdez	
Wein Air Alaska	0%	All locations	
Reeve Aleutian Airways	Pay lower	Aleutians	Room and board paid. Additional benefits, less experience required.
Morrison-Knudson	No set differential. Depends on negotiations with client.		

Table 2.12 (continued)

Company	Scale Percent Above Anchorage	Locations Affected	Notes
Union Minimum Scales for State Contracts:			
Journeyman Carpenter	3.3%	Galena, Tanana, McGrath, Nenana, Fairbanks-S. of Arctic Circle, Ft. Yukon-N. of Arctic Circle, Barrow, Kotzebue, Nome, Hooper Bay	
	0%	Everywhere else	
Brush Painters	1.3%	(See Journeyman Carpenter)	
	0%		
Journeyman Plumber	2.8%	Galena, Tanana, McGrath, Nenana, Fairbanks-S. of Arctic Circle, Ft. Yukon-N. of Arctic Circle, Barrow, Kotzebue, Nome, Hooper Bay	
	0%	Cordova, Valdez, Palmer, Seward, Kenai, Kodiak, Aleutian Islands, Bethel	
	- 9.0%	Haines-Skagway, Juneau, Sitka, Petersburg-Wrangell, Ketchikan	
Journeyman Roofer	1.1%	(See Journeyman Carpenter)	
	0%		

Sources: Alaska Department of Labor, Title 36: Public Contracts Laborers and Mechanics Minimum Rates of Pay, Wage and Hour Division Pamphlet No. 600; Private contact with firms listed.

Table 2.13

STATE SALARY SCHEDULE DIFFERENTIALS,
GENERAL GOVERNMENT UNIT, STEP A
MAY 16, 1976

Place	Gen'l Govt. Schedule	Monthly Rates			Percent of Anchorage		
		Range 8	Range 15	Range 30	Range 8	Range 15	Range 30
Ketchikan	A	$ 957	$1,513	$3,802	100.0	100.0	100.0
Petersburg-Wrangell	C	987	1,571	3,942	103.1	103.8	103.7
Sitka	C	987	1,571	3,942	103.1	103.8	103.7
Juneau	A	957	1,513	3,802	100.0	100.0	100.0
Haines-Skagway	D	1,018	1,630	4,091	106.4	107.7	107.6
Cordova	E	1,083	1,754	4,403	113.7	115.9	115.8
Valdez	I	1,120	1,821	4,569	117.0	120.4	120.2
Palmer	C	987	1,571	3,942	103.1	103.8	103.7
Anchorage	A	957	1,513	3,802	100.0	100.0	100.0
Seward	D	1,018	1,630	4,091	106.4	107.7	107.6
Kenai	D	1,018	1,630	4,091	106.4	107.7	107.6
Kodiak	D	1,018	1,630	4,091	106.4	107.7	107.6
Aleutian Islands	F	1,190	1,960	4,917	124.3	129.5	129.3
Dillingham	F	1,190	1,960	4,917	124.3	129.5	129.3
Bethel	G	1,231	2,034	5,103	128.6	134.4	134.2
Galena-Tanana-McGrath	H	1,270	2,109	5,295	132.7	139.4	139.3
Nenana	G	1,231	2,034	5,103	128.6	134.4	134.2
Fairbanks and S. of Arctic Circle	E	1,083	1,754	4,403	113.7	115.9	115.8
Ft. Yukon and N. of Arctic Circle	H	1,270	2,109	5,295	132.7	139.4	139.3
Barrow-Kotzebue	H	1,270	2,109	5,295	132.7	139.4	139.3
Nome	F	1,190	1,960	4,917	124.3	129.5	129.3
Hooper Bay	G	1,231	2,034	5,103	128.6	134.4	134.2
Contiguous U.S. and Canada	X	800	1,231	3,048	83.6	81.4	80.2

Source: State of Alaska Salary Schedule, May 16, 1976.

Note: The salary for any given position is defined by schedule, which varies geographically by region; range, which varies with the job; and step, which varies with experience. The figures in the table reflect low, medium, and high ranges for each location.

Summary

In Chapter 2, this study deals with two major issues in developing "cost of living" indices for Alaska. The first problem is that insufficient data exists to permit the construction of a comprehensive index for any location other than Anchorage. In spite of this difficulty, the bulk of the chapter is devoted to the construction of a total consumption cost index which is believed to more accurately reflect the differences in the costs of maintaining a given standard of living in various locations in the state than any other index currently available. The discussion is keyed to the budget components of the U.S. Intercity Index, published annually by the Bureau of Labor Statistics. Departures from BLS methodology and proxy variables which are used in the Alaskan index are specified.

The second problem can be most simply expressed in its Alaskan context as a question of whether a "cost of living" comparison of two locations should be a comparison of the costs at the two locations of a fixed bundle of goods and services characteristic of only one of the locations, or whether the comparison should be between the costs of whatever goods and services are actually purchased at each location, recognizing that actual purchases may reflect differences in standards of living. Since the intent of the School Foundation Program seems to be to provide equal education

opportunities in different places in Alaska, a "cost of living" index reflecting this intent should also hold standard of living constant to the maximum possible extent. For this reason, we used a fixed weight market basket based on the Anchorage BLS Standard Family Budgets. The index used in this study is compared to the other indices used by the state, which do not use fixed weights, and to state and private "cost of living" pay differentials.

Chapter 2

Footnotes

1. For a more complete discussion, see School Finance in Alaska, Report No. 1, "An Overview of Current Issues, Sources, and Distribution of Funds for Public Elementary and Secondary Education," Center for Northern Education Research, University of Alaska, Fairbanks, 1976, Appendix B.

2. However, "cost of living" payments should not be confused with hardship pay or other benefits paid to workers to persuade them to accept disagreeable or dangerous working conditions. These benefits are often given by private industry and governments even where "cost of living" is relatively low. Private contracts in Alaska may contain elements of hardship pay in some locations, even if the difference in pay is called a "cost of living" differential.

3. U.S. Department of Labor, Bureau of Labor Statistics, "Urban Family Budgets." See: Bureau of Labor Statistics, Three Standards of Living for an Urban Family of Four Persons, Spring, 1967," Bulletin No. 1570-5, U.S. Department of Labor, Bureau of Labor Statistics; Edna B. Branch, "Urban Family Budgets Updated to Autumn 1974," Monthly Labor Review 98(6): 42-48, June 1975. The budgets continue to be a subject of controversy to some extent. See: Mark K. Sherwood, "Family Budgets and Geographic Differences in Price Levels," Monthly Labor Review 98(4): 8-15, April 1975.

4. Economists call these benefits and costs either public goods or externalities. Public goods are goods like fresh air or recreation opportunities in an uncrowded environment, where one person's consumption of the good does not affect another person's ability to consume. Other benefits and costs are called externalities. Even though one person's consumption may subject others to benefits and/or costs, the price of goods consumed does not necessarily take that fact into account. For example, fishing benefits conferred on a person by virtue of his living next to a salmon stream may not necessarily be reflected in the price of the house, nor would the costs associated with a loud and obnoxious neighbor. These are benefits and costs associated with the decision to purchase which are "external" to the market decision and which will not be reflected in the "cost of living."

5. In particular, regional food preferences, availability of public transportation, and climate differences.

6. After a hiatus of several years, the Bureau of Labor Statistics will resume consumer surveys in Fairbanks in the spring of 1977. Based on the survey, a Consumer Price Index will be computed for Fairbanks, but it is uncertain whether there will be an "intercity index" to compare to other places. Anchorage is the only other Alaskan city for which such surveys have been done since 1959-60.

7. The problem was at least partly costs of data collection, since reporting became quarterly for the CPI in 1969, and the BLS felt their old series was outdated.

8. Quarterly Report on Alaska's Food Prices, Prepared by the Economics Department, Alaska Agricultural Experiment Station, Issued by the Cooperative Extension Service, University of Alaska, Fairbanks, Alaska. Issued for March, June, September, and December of each year.

9. See footnote 3.

10. Included in the data required from other agencies is the USDA low-cost, moderate-cost, and liberal food plan, found in Family Food Plans, Revised 1964 (CA 62-19, November 1964), Agricultural Research Service, U.S. Department of Agriculture, and standards for the shelter component of housing cost, established by the American Public Health Association and U.S. Public Housing Administration. Specific items required to fulfill the general standards were based upon observed consumer behavior established regionally by consumer surveys. The most recent surveys were completed by BLS between July, 1973 and June, 1974.

11. Three meals per day per person, 7 days per week, 52 weeks per year, for an urban family of four persons: employed husband, age 38, wife not employed outside the home, 8-year-old girl, 13-year-old boy.

12. Food price estimates are based on data obtained during collection of food prices for the Consumer Price Index.

13. See BLS Bulletin 1570-5, p. 41, and food appendix.

14. The Fairbanks-North Star Borough Impact Information Center Report No. 30 (October 20, 1976) explains further, and derives a superior intercity food price index for Fairbanks compared with Anchorage. The problem in the current study is that too many places were involved to make the Impact Information Center solution practical.

15. BLS Bulletin 1570-5, p. 10 and p. 42. See also BLS Bulletin 1570-3, City Worker's Family Budget: Pricing, Specification, and Average Prices, Autumn 1966.

16. State of Alaska, Survey of Housing and Food Costs, Division of Personnel and Labor Relations (Draft), November, 1976. Methodology was consistent with the 1972 survey of the same name.

17. Randomness essentially means that each household has an equal chance of being selected. Oversampling state workers prevented this. Sample sizes were selected in proportion to the number of state workers in a locality. This is almost the reverse of sampling techniques designed to maximize the confidence one can have that the sample accurately represents the population. Sample size should be large enough to insure that, given the sample variance in response to questions on, for example, the amount spent on housing, the sample mean is within a tolerable confidence interval of the "true" mean for the population. If responses are equally variable in large cities and small villages, the absolute sample size should be a relatively larger proportion of the total population in the small village. If housing costs were extremely variable, it might be necessary to sample virtually 100 percent of small village households and a very small sample in urban areas. While this may not be practically possible, the sample size does need to be larger in small villages and could be smaller in Anchorage.

18. If the interviewers were carefully trained to give a rating in cardinal terms--that is, a rating of 3.5 is 3.5 times as bad as a rating of 1--the cost per constant quality unit would have meaning.

19. On the other hand, some adjustment probably ought to be made for the differences in method of meeting a given standard of living, since there might be differences between areas where, for example, gas is used for space heating and areas where oil is used. This adjustment is made in this study.

20. There was no information on whether this is actually true. Insurance is expected not to vary, and maintenance repair costs bear an unknown relationship to other costs of living. For moderate incomes, the basic Anchorage travel cost number allows some normal intercity transportation. Thus for Fairbanks, Juneau, and Ketchikan, the assumption of "no" air transportation really means the same amount as is characteristic of Anchorage residents. Outlying area residents are specifically assumed to require instate air travel or its equivalent in cost.

21. It was necessary to use the overall food price index in compiling cost of living, since a separate index was not calculated for canned foodstuffs.

22. See footnote 21.

23. Teachers do not pay the Social Security tax. However, classified workers are on the Social Security system.

24. In computing the final "cost of living" index, it was decided that total consumption costs would be a closer proxy for operating costs of schools than would total budget costs. Taxes were therefore excluded when the index was calculated.

CHAPTER 3

Comparison of the Instructional Unit Allotments and Cost of Living with Actual Expenditures for Education

Introduction

Having compared the Instructional Unit Allotments with the various measures of the differences in "cost of living" in several school districts and Regional Education Attendance Areas (REAAs), we can now ask whether the Instructional Unit Allotments adjust for differences in operating costs. Again, it is necessary to make some important but subtle theoretical distinctions in order to understand the comparisons, which are limited by the data available.

Expenditures on Education vs. Cost of Education Units

In an ideal world, the Instructional Unit Allotment would inflate the allocation for a basic unit of education by just enough to adjust for the different costs of providing that basic unit in different parts of the state. In such a world, the computation of the Instructional Unit Allotment would be simple: each district and REAA[1] could be required under Department of Education regulations to submit its estimated and actual costs of the basic unit at the beginning and end of the school year, together with the number of basic units taught. In fact, however, there is disagreement about

how to define the ideal basic unit, since several different sorts of classes are taught for students of varying abilities, backgrounds, and ages. It seems ridiculous to ask how much high school shop is equivalent in units of education to a month of fourth grade arithmetic or remedial reading, particularly if taught to different students of different backgrounds, and in different surroundings. Even the same class, taught in different circumstances is different: the Supreme Court of the United States ruled in the case of Brown v. the Board of Education that "separate-but-equal" facilities, when defined as simply as a school-and-teachers-and-students, are not necessarily equal. The quality of the physical facility and teacher, the background of the students, the size of class, and the subject being taught all help determine "how much" and even "what" gets transferred in a teaching day. The founders of Alaska's School Foundation program recognized the problem, and adjusted for some of the ways in which the quality and cost of education can vary.

A major determinant of the quality of education is the type of instruction offered. A major premise of the Foundation program, for example, is that special education and vocational education are more expensive than the average academic class for the same number of students. Therefore, the funding formulas provide extra amounts of money for smaller numbers of students in vocational and special education, and also allows them to be figured in regular

instruction for district totals. (Table 3.1) The number of instructional units thus computed in the Foundation program, however, does not allow for the differences in the kind and size of classes taught in regular instruction, or the type of program pursued: nine students constitute an instructional unit. This leads to the fundamental difficulty that comparing expenditures per student will not tell one how costs of an ideal basic unit of instruction vary by location. It only tells how the costs of providing nine students with "something" vary by location. The problem is basic to understanding differences in spending levels. While one district in a low-cost area may choose to provide an elaborate program and another in a high-cost area may choose a "bare bones" program, the expenditures per student or per instructional unit may be identical. Unfortunately for this study, there is no information about what an identical program would have cost in both locations; there is only information on what the total of all programs actually pursued cost.

Expenditures per ADM vs. Instructional Unit Allotment Index

Since it is not currently possible to compare unit costs for an identical program of instruction, this section will compare the total cost of the programs which were actually pursued in each locality in the 1975-76 school year on a cost per student and a cost per instructional unit basis.[2] Each of these comparisons provides

Table 3.1

Schedule of Allowable Instructional Units

(1) Elementary and Secondary Schools schedule

In districts with ADM under 1,000:

ADM	Instructional Units
Under 10	1
10-20	2
21-32	3
33-46	4
47-62	5
63-80	6
81-999	6 plus 1 for each 18 or fraction of 18 in ADM

In districts with ADM of 1,000 or over:

ADM	Instructional Units
Under 10	1
10-20	2
21-32	3
33-46	4
47-62	5
63-80	6
81-99	7
100-3005	7 plus 1 for each 19 pupils or fraction of 19
3006 and over	160 plus 1 for each 23 pupils or fraction of 23

(2) Vocational Education schedule:

ADM*	Instructional Units
5-10	1
11-25	2
26-40	3
41 and over	3 plus 1 for each 20 or fraction of 20 in ADM

(3) Special Education schedule:

ADM*	Instructional Units
5-8	1
9-15	2
16-24	3
25-35	4
36 and over	4 plus 1 for each 11 or fraction of 11 in ADM

(4) Correspondence Study schedule: If a district has 5 or more correspondence pupils, the units are computed in the same manner as for elementary and secondary schools in districts with ADM under 1,000.

*ADM for vocational education and special education is based on full-time equivalent students.

Source: Alaska Statutes 14.17.041

a different piece of information. The expenditures per Average Daily Membership (the number of enrolled students present and absent divided by total days in session) gives an idea of how much was spent by the school district per student enrolled. Instructional units adjust for the fact that districts with many small schools which run many special education and vocational programs will be inherently more costly if equivalent facilities and staff are provided. The expenditures per ADM are expected to be higher in districts which have high Instructional Unit Allotments; indeed, this is shown to be so in Table 3.2. However, the index of relative expenditures per ADM is significantly greater in the small districts and REAA's than the corresponding Instructional Unit Allotments Index. The only exceptions occur in Fairbanks, Juneau, Nome, Valdez, and Wrangell. Juneau is explained by the fact that no district is allowed an Instructional Unit Allotment less than the base, which is Anchorage. The Fairbanks, Nome, Valdez, and Wrangell allotment indices are fairly close to the actual expenditures per ADM index values, when Anchorage is taken as the base. The most obvious departures occur in small districts and REAAs, where many of the "fixed" costs of operation, such as administration costs and plant operation and maintenance costs, which change very little with the number of students, get averaged over fewer students. These districts are also characterized by low pupil-teacher ratios because of small enrollments, which tends to increase instruction

Table 3.2

Expenditures Per ADM vs. Instructional Unit Allotments, 1975-76

District or REAA[1]	1975-76 ADM	Total 1975-76 Expenditures/ADM	Total 1975-76 Expenditures/ADM as a Percentage of Anchorage	Instructional Unit Allotment as a Percentage of Anchorage
Anchorage	40,126.40	$2,123.2	100.0	100.00
Bristol Bay	248.82	4,146.7	195.3	132.56[2]
Cordova	550.54	2,705.1	127.4	115.00
Craig	150.74	4,775.3	224.9	107.50
Dillingham	412.47	3,985.4	187.7	132.56[2]
Fairbanks	12,145.03	2,284.8	107.6	111.25
Galena	141.59	4,154.8	195.7	140.44[2]
Haines	490.93	2,714.5	127.8	107.50
Hoonah	260.18	3,703.5	174.4	107.50
Hydaburg	113.00	3,008.9	141.7	107.50
Juneau	4,457.85	2,078.8	97.9	100.00
Kake	206.78	2,317.1	109.1	107.50
Kenai	5,046.08	2,586.4	121.8	107.50
Ketchikan	2,674.16	2,492.8	117.4	100.00
King Cove	116.75	3,449.3	162.5	132.56[2]
Klawock	62.63	3,708.2	174.7	107.50
Kodiak	2,156.01	2,679.8	126.2	107.50
Matanuska-Susitna	3,005.79	2,599.5	122.4	103.75
Nenana	187.58	4,404.4	207.4	133.75
Nome	894.54	2,634.6	124.1	132.56[2]
North Slope	1,073.73	6,308.0	297.1	140.44[2]
Pelican	37.76	3,634.0	171.2	112.88[2]
Petersburg	640.46	2,293.1	108.0	103.75
Selawik	199.28	4,279.2	201.5	140.44[2]
Sitka	1,758.42	2,376.1	111.9	103.75
Skagway	217.21	2,324.0	109.5	107.50
St. Marys	113.00	5,127.5	241.5	136.50[2]
Unalaska	120.77	4,963.4	233.8	132.56[2]
Valdez	894.58	2,408.6	113.4	115.00
Wrangell	589.72	2,106.9	99.2	103.75
Yakutat	148.05	4,829.5	227.4	112.88[2]

[1]REAA ADM's were adjusted to reflect 1975-76 AUBSD regions.

[2]Includes an additional 5 percent isolation factor, since the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System.

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table 3.2 (continued)

District or REAA[1]	1975-76 ADM	Total 1975-76 Expenditures/ADM	Total 1975-76 Expenditures/ADM as a Percentage of Anchorage	Instructional Unit Allotment as a Percentage of Anchorage
N.W. Arctic	595.53	$4,789.3	226.0	140.44[2]
Bering Straits	186.65	7,822.6	368.4	132.56[2]
Lower Yukon	231.35	5,079.1	239.2	136.50[2]
Lower Kuskokwim	1,339.15	3,586.6	168.9	136.50[2]
Kuspuk	264.32	5,863.5	276.2	140.44[2]
S.W. Region	854.63	4,488.2	211.4	132.56[2]
Lake and Peninsula				132.56[2]
Aleutian Chain	409.47	4,411.6	207.8	132.56[2]
Pribilof Islands				132.56[2]
Adak	642.88	2,506.2	118.0	132.56[2]
Iditarod	242.31	3,611.5	170.1	140.44[2]
Yukon-Koyukuk	636.19	4,681.9	220.5	140.44[2]
Yukon Flats	330.44	5,622.1	264.8	140.44[2]
Upper Railbelt	346.68	4,119.7	194.0	133.75
Delta/Greely	1,155.44	3,087.5	145.4	111.25
Alaska Gateway				111.25
Copper River	727.20	3,393.3	159.8	115.00
Annette Island	413.36	2,593.5	122.2	105.00[2]
Chatham	429.26	3,800.4	179.0	107.50
S.E. Islands				105.00[2]
Chugach	71.34	3,667.9	172.8	115.00

[1] REAA ADM's were adjusted to reflect 1975-76 AUBSD regions.

[2] Includes an additional 5 percent isolation factor, since the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System.

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

costs per pupil. Finally, many of the small districts are located in areas of the state which are relatively isolated from surface transportation, and are characterized by severe climate. These factors contribute to increased operation and maintenance costs; and where extensive distances are involved in administering the schools, as in the North Slope district and many of the REAAs, administrative expenditures also tend to be high. The detail of operations expenditures per ADM can be found in Appendix Table A.1.

Expenditures per Instructional Unit and Foundation Aid vs. Instructional Unit Allotment Index

From the previous section, it appears that the Instructional Unit Allotments do not make up the difference in expenditures per student between Anchorage and other communities in the state, even though they are correlated.[3] However, another aggregate comparison is possible which may be more significant. In Table 3.3, the Instructional Unit Allotment Index is compared with an index of total 1975-76 school year expenditures per instructional unit. (Detail is available in Appendix Table A.2.) This comparison adjusts the raw Average Daily Membership data in several significant ways. The formulas which are used to determine the instructional unit, "the aggregate of all direct and indirect services necessary to provide a standard level of instruction for a group of pupils,"[4] applies in such a way that for districts with less than 1,000 students, instructional units are generated at a higher rate than for

Table 3.3

Expenditures Per Instructional Unit vs.
Instructional Unit Allotments, 1975-76

District	1975-76 Instructional Units[1]	Total 1975-76 Expenditures/ Instructional Unit	Total 1975-76 Expenditures/ Instructional Unit as a Percentage of Anchorage	Instructional Unit Allotment as a Percentage of Anchorage
Anchorage	2,268	$37,564	100.0	100.00
Bristol Bay	26	39,684	105.6	132.56[2]
Cordova	48	31,027	82.6	115.00
Craig	15	47,976	127.7	107.50
Dillingham	39	42,150	112.2	132.56[2]
Fairbanks	740	37,499	99.9	111.25
Galena	16	36,767	97.9	140.44[2]
Haines	37	36,017	95.9	107.50
Hoonah	25	38,543	102.6	107.50
Hydaburg	11	30,910	82.3	107.50
Juneau	289	32,065	85.4	100.00
Kake	19	31,729	84.5	107.50
Kenai	357	36,557	97.3	107.50
Ketchikan	184	36,229	96.4	100.00
King Cove	14	28,765	76.6	132.56[2]
Klawock	8	29,030	77.3	107.50
Kodiak	170	33,987	90.5	107.50
Matanuska-Susitna	217	36,007	95.9	103.75
Nenana	20	41,309	110.0	133.75
Nome	71	45,870	122.1	132.56[2]
North Slope	103	65,758	175.1	140.44[2]
Pelican	5	27,443	73.1	112.88[2]
Petersburg	48	30,597	81.5	103.75
Selawik	21	40,607	108.1	140.44[2]
Sitka	124	33,696	89.7	103.75
Skagway	19	26,568	70.7	107.50
St. Marys	14	41,387	110.2	136.50[2]
Unalaska	14	42,816	114.0	132.56[2]
Valdez	70	30,781	81.9	115.00
Wrangell	46	27,011	71.9	103.75
Yakutat	16	44,688	119.0	112.88[2]

[1]REAA computed Instructional Units have been adjusted to reflect the regions operating under the AUBSD schools in 1975-76. REAA names are used.

[2]Includes an additional 5 percent isolation factor because the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System.

Source: Alaska Department of Education

Table 3.3 (continued)

REAA	1975-76 Instructional Units[1]	Total 1975-76 Expenditures/ Instructional Unit	Total 1975-76 Expenditures/ Instructional Unit as a Percentage of Anchorage	Instructional Unit Allotment as a Percentage of Anchorage
N.W. Arctic	60	$47,626	126.8	140.44[2]
Bering Strait	22	66,367	176.7	132.56[2]
Lower Yukon	26	45,194	120.3	136.50[2]
Lower Kuskokwim	93	51,645	137.5	136.50[2]
Kuspuk	30	51,661	137.5	140.44[2]
S.W. Region	109	35,190	93.7	132.56[2]
Lake & Peninsula				132.56[2]
Aleutian Chain	47	38,434	102.3	132.56[2]
Pribilof Islands				132.56[2]
Adak	43	37,469	99.7	132.56[2]
Iditarod	33	26,518	70.6	140.44[2]
Yukon-Koyukuk	74	40,251	107.2	140.44[2]
Yukon Flats	35	53,079	141.3	140.44[2]
Upper Railbelt	35	40,806	108.6	133.75
Delta/Greely	105	33,976	90.4	111.25
Alaska Gateway				111.25
Copper River	66	37,388	99.5	115.00
Annette Island	30	35,735	95.1	105.00[2]
Chatham	63	25,895	68.9	107.50
S.E. Islands				105.00[2]
Chugach	7	37,381	99.5	115.00

[1] REAA computed Instructional Units have been adjusted to reflect the regions operating under the AUBSD schools in 1975-76. REAA names are used.

[2] Includes an additional 5 percent isolation factor because the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System

districts with more than 1,000 students. (Refer back to Table 3.2.) Except in the very largest districts, secondary students generate instructional units at a higher rate than primary students, because each high school is counted individually; likewise, special education and vocational education students generate instructional units at a higher rate than regular instruction students, and they also get counted in regular instruction. Finally, the Commissioner may authorize a district operating a school in a remote area (a condition which applies to nearly all the REAAs) to compute instructional units for that school as if it were a separate entity. Since very small numbers of students result in proportionately greater numbers of instructional units, this feature can be important for a small district with scattered schools. Since the instructional unit exists to adjust for many of the non-geographic factors which are thought to increase costs, it should be true that the only significant remaining differentials will be those associated with geography; but such is not quite the case, as is revealed by Table 3.3.[5] While expenditures per instructional unit do not diverge from the Anchorage base as much as do costs per ADM, several districts and REAA's spend far less per instructional unit than does Anchorage; while for a few, the index of expenditures per instructional unit is higher than their Instructional Unit Allotment Index. These districts were either in high cost areas (North Slope, Bering Strait, Lower Kuskokwim, and Yukon Flats) or were isolated communities in regions otherwise considered low cost (Craig, Yakutat), which may indicate

special local conditions leading to increased costs. Among the district schools, it is only when the five percent additional isolation factor and the equalized percentage formula are taken into account, that the total Foundation Program aid at least compensates for the geographic differences in expenditures per instructional unit and in expenditures per pupil. As can be found by comparing the first and third or second and fourth columns of Table 3.4, only the North Slope district remains "under-compensated." No equivalent table is available for the REAA schools since these get 100 percent state funding, but reexamination of the second part of Table 3.3, above, indicates that the five percent isolation factor is critical to bringing the funding approximately into line with actual expenditures per instructional unit for the Lower Kuskokwim, Kuspuk, and Yukon Flats REAA's for 1975-76. Apparently only Bering Straits REAA and North Slope district schools are outliers.

Local Spending

There is another fact about Alaskan school finance which the figures in the last two columns of Table 3.4 reveal, however. A few districts generate local revenues per student far in excess of the statewide average. Examples are Anchorage, North Slope, Unalaska, and Haines, but the meaning of this phenomenon is not clear. These districts might be attempting to purchase "more education" per instructional unit, or it may be that standard education

Table 3.4

District Schools: Indices of Expenditures, Foundation Aid, and Local Revenues, 1975-76

District	Expenditures per ADM % of Anchorage	Expenditures per Instr. Unit % of Anchorage	Foundation Aid per ADM % of Anchorage	Foundation Aid per Ins. Unit % of Anchorage	Estimated Local Revenues per ADM % of Anchorage	Estimated Local Revenues per Instr. Unit % of Anchorage
Anchorage	100.0	100.0	100.0	100.0	100.0	100.0
Bristol Bay	195.3	105.6	242.6	131.2	72.0	38.9
Cordova	127.4	82.6	185.0	120.0	31.5	20.4
Craig	224.9	127.7	183.0	126.7	14.2	8.1
Dillingham	187.7	112.2	230.4	137.7	10.9	6.5
Fairbanks	107.6	99.9	159.7	114.6	49.2	45.6
Galena	195.7	97.9	152.5	148.2	13.8	6.9
Haines	127.8	95.9	144.8	108.6	99.7	74.9
Hoonah	174.4	102.6	200.6	118.0	0.6	0.3
Hydaburg	141.7	82.3	195.4	113.4	2.5	1.4
Juneau	97.9	85.4	115.2	100.4	35.2	30.7
Kake	109.1	84.5	184.7	113.6	8.0	4.9
Kenai	121.8	97.3	135.4	108.2	76.1	60.8
Ketchikan	117.4	96.4	125.1	102.8	89.6	73.7
King Cove	162.5	76.6	296.0	139.5	26.0	12.3
Klawock	174.7	77.3	256.0	113.3	6.6	2.9
Kodiak	126.2	90.5	152.0	109.0	36.3	26.1
Mat-Su	122.4	85.9	132.4	103.6	52.8	41.3
Nenana	207.4	110.0	264.0	140.0	9.9	5.3
Nome	124.1	122.1	206.3	146.9	9.3	6.6
North Slope	297.1	175.1	235.9	139.0	440.1	259.4
Pelican	171.2	73.1	268.3	114.5	8.0	3.4
Petersburg	108.0	81.5	140.0	105.6	31.2	23.6
Selawik	201.5	108.1	277.5	148.9	5.2	2.8
Sitka	111.9	89.7	132.4	106.1	48.1	38.5
Skagway	109.5	70.7	182.0	117.6	38.1	24.6
St. Marys	241.5	110.2	317.4	144.8	0.8	0.4
Unalaska	233.8	114.0	296.3	150.3	120.0	58.6
Valdez	113.4	81.9	157.6	113.8	88.3	63.8
Wrangell	99.2	71.9	151.0	109.4	20.6	14.9
Yakutat	227.4	119.0	242.3	126.7	3.3	1.8

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

units cost more in these places than might be supposed, so that the Instructional Unit Allotments in question do not fully account for the geographic cost differences. Likewise, referring to Table 3.5, one can see that there are several school districts which spend far above the state average in local funds per dollar of property value, in spite of the fact that this does not result in especially high local revenue per instructional unit. These places may be attempting to compensate for funding deficiencies in the Foundation program by heavy "optional" taxation. Included are Galena, Kake, King Cove, Selawik, Unalaska. There is no local funding of schools in the REAA's, of course, so there is no measure of local effort to adjust for funding problems. No real conclusion is possible without reference to a common program denominator which reveals whether it is costs of program or choice of program which causes local expenditures to be higher than average.

Furthermore, making Anchorage the base for a program which is supposed to provide basic education may be misleading. Anchorage attempts to provide many programs which simply are not available in smaller communities. Comparing the cost of an Anchorage education program with an identical program in the small, rural communities would undoubtedly result in cost differentials far larger than those which actually exist. For examples of some of the differences, one need only note that many of these localities provide no pupil support services, no pupil transportation, and some, no lunch programs.

Table 3.5

Local Revenue Effort, District Schools, 1975-76

District	Local Revenue per ADM	Local Revenue per Instr. Unit	Local Revenue per $1,000 of Full Value[1] (Mills)	Local Rev./ Full Value as % of Anchorage	Local Rev./ Instr. Unit as % of Anchorage
Anchorage	$ 724	$12,802	12.6	100.0	100.0
Bristol Bay	521	4,986	6.7	53.2	38.9
Cordova	228	2,617	5.9	46.8	20.4
Craig	103	1,033	4.6	36.5	8.1
Dillingham	79	838	3.5	27.8	6.5
Fairbanks	356	5,840	7.6	60.3	45.6
Galena	100	883	11.8	93.7	6.9
Haines	722	9,585	15.1	119.8	74.9
Hoonah	4	40	0.5	4.0	0.3
Hydaburg	18	182	2.1	16.7	1.4
Juneau	255	3,929	4.8	38.1	30.7
Kake	58	632	8.6	68.3	4.9
Kenai	551	7,783	4.8	38.1	60.8
Ketchikan	649	9,438	9.6	76.2	73.7
King Cove	188	1,571	17.5	138.9	12.3
Klawock	48	375	4.9	38.9	2.9
Kodiak	263	3,338	5.9	46.8	26.1
Matanuska-Susitna	382	5,288	4.7	37.3	41.3
Nenana	72	675	4.4	34.9	5.3
Nome	67	845	4.9	38.9	6.6
North Slope	3,186	33,208	13.4	106.3	259.4
Pelican	58	440	1.3	10.3	3.4
Petersburg	226	3,016	5.5	43.7	23.6
Selawik	38	364	9.4	74.6	2.8
Sitka	348	4,931	6.0	47.6	38.5
Skagway	276	3,153	3.9	31.0	24.6
St. Marys	6	46	1.7	13.5	0.4
Unalaska	869	7,500	20.4	161.9	58.6
Valdez	639	8,169	6.1	48.4	63.8
Wrangell	149	1,910	5.3	42.1	14.9
Yakutat	24	225	3.5	27.8	1.8
Average	362	4,376	7.0	55.6	34.2

[1]Full value is determined annually by the Department of Community and Regional Affairs as "the estimated price which the property would bring in an open market and under the then prevailing market conditions in a sale between a willing seller and a willing buyer both conversant with the property and with prevailing price levels." (Section 2, Chapter 118, SLA 1972) It differs from assessed value in that local property exemptions are ignored. (Attorney General Opinion 18, 1962)

Sources: Alaska Department of Education; Alaska Department of Community and Regional Affairs Alaska Taxable 1975.

See Appendix Table A.2. Likewise, if Anchorage provided only a "bare bones" education program, this would also imply a larger expenditure differential between Anchorage and rural areas than currently exists. In order to see how the costs of education for similar items can differ, the audited budgets for district schools and the Alaska Unorganized Borough School District (now, REAA's) were split into their component functions; and two of these, Regular Instruction and Operation and Maintenance, were examined in even finer detail. However, whether total expenditures are chosen, or whether these are disaggregated to compare to the Foundation Program's Instructional Unit Allotments, the fact of Anchorage district's different behavior makes such comparison difficult.

Regular Instruction

Table 3.6 is a summary in index form of the total relative expenditures and relative expenditures on regular instruction, the largest component of total expenditures, compared with the Instructional Unit Allotments Index. As can be seen from the table, whether total expenditures or instructional expenditures are used as the basis of comparison, most districts and REAA's spend less per instructional unit compared with Anchorage, while the cost of operations allowance implicit in the Instructional Unit Allotments would permit them to spend more, given identical programs. The fact is that programs are not identical. Indeed, we found that the correlation coefficient between the Instructional Unit Allotments Index

Table 3.6

Total Expenditures Per Instructional Unit and Regular Expenditures Per Instructional Unit, Compared to Instructional Unit Allotments, 1975-76

Place	Total Expenditures per Instructional Unit as a Percent of Anchorage	Regular Instructional Expenditures per Instructional Unit as a Percent of Anchorage	Instructional Unit Allotment as a Percent of Anchorage
Anchorage	100.0	100.0	100.00[1]
Bristol Bay	105.6	79.6	132.56[1]
Cordova	82.6	64.3	115.00
Craig	127.7	56.6	107.50[1]
Dillingham	112.2	60.3	132.56[1]
Fairbanks	99.9	86.1	111.25[1]
Galena	97.9	69.6	140.44[1]
Haines	95.9	90.8	107.50
Hoonah	102.6	78.0	107.50
Hydaburg	82.3	88.2	107.50
Juneau	85.4	69.5	100.00
Kake	84.5	81.6	107.50
Kenai	97.3	79.2	107.50
Ketchikan	96.4	101.8	100.00[1]
King Cove	76.6	45.6	132.56[1]
Klawock	77.3	67.8	107.50
Kodiak	90.5	73.2	107.50
Matanuska-Susitna	95.9	73.1	103.75
Nenana	110.0	64.5	133.75[1]
Nome	88.4	108.5	132.56[1]
North Slope	175.1	114.8	140.44[1][1]
Pelican	73.1	83.9	112.88[1]
Petersburg	81.5	75.2	103.75[1]
Selawik	108.1	59.5	140.44[1]
Sitka	89.7	94.2	103.75
Skagway	70.7	66.9	107.50[1]
St. Marys	110.2	36.4	136.50[1]
Unalaska	114.0	73.0	132.56[1]
Valdez	81.9	66.2	115.00
Wrangell	71.9	69.4	103.75[1]
Yakutat	119.0	79.6	112.88[1]

[1]Includes an additional 5 percent since the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System.

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table 3.6 (continued)

Place	Total Expenditures per Instructional Unit as a Percent of Anchorage	Regular Instructional Expenditures per Instructional Unit as a Percent of Anchorage	Instructional Unit Allotment as a Percent of Anchorage
N.W. Arctic	126.8	82.1	140.44[1]
Bering Strait	176.7	66.8	132.56[1]
Lower Yukon	120.3	100.8	136.50[1]
Lower Kuskokwim	137.5	93.8	136.50[1]
Kuspuk	137.5	83.8	140.44[1]
S.W. Region	93.7	64.9	132.56[1]
Lake and Peninsula			132.56[1]
Aleutian Chain	102.3	72.6	132.56[1]
Pribilof Islands			132.56[1]
Adak	99.7	100.4	132.56[1]
Iditarod	70.6	56.5	140.44[1]
Yukon-Koyukuk	107.2	72.3	140.44[1]
Yukon Flats	141.3	75.4	140.44[1]
Upper Railbelt	108.6	81.6	133.75
Delta/Greely	90.4	76.4	111.25
Alaska Gateway			111.25
Copper River	99.5	71.8	115.00
Annette Island	95.1	79.1	105.00[1]
Chatham	68.9	57.7	107.50
S.E. Islands			105.00[1]
Chugach	99.5	127.2	115.00

[1] Includes an additional 5 percent since the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or the Marine Highway System.

(including isolation factors) and costs of regular instruction index is only -0.23 for the district schools, which implies slightly more state aid in those cases where spending on regular instruction was less.

Local conditions dominate regular instruction expenditures. Even when Anchorage is excluded, salaries and benefits per instructional unit or ADM paid to employees of the regular school districts cover a broad range that bears little relationship to either their relative costs of living or instructional unit allotments. In 1975-76, for example, the districts of King Cove and Unalaska, which have practically the same enrollment and are similarily located (and which get identical Instructional Unit Allotments), differed by nearly 70 percent in the amount spent per instructional unit on certified salaries, and by nearly 50 percent in the total spent per instructional unit (Table 3.6). Kodiak spent less per student in 1975-76 than Ketchikan, a similar-sized district, did in spite of the fact that Kodiak is in a "higher cost" district. This is true whether regular instruction or total expenditure is used to make the comparison. Skagway and Craig get the same Instructional Unit Allotment and are about the same size, yet Craig spent far more in total and on regular instruction per student than did Skagway; while Hoonah, a slightly larger district in the same general area, spent less than Craig but more than Skagway per instructional unit, while it outspent both on regular instruction. Some of the differences can be explained

by differences in average salaries (Table 3.7), but there must also be differences in the program offered. Note that neither salaries nor regular instructional expenses for 1975-76 bear much relationship to the Instructional Unit Allotments or to the relative "cost of living," as measured by this study's Total Consumption Cost Index in Table 3.8.[6] (Detail of regular instruction expense appears in Appendix Tables A.3 and A.4. Refer to footnote 2, this chapter.)

Plant Operation and Maintenance

Plant operation and maintenance is the second largest single function for which most school districts spent funds in the 1975-76 school year. As was true for regular instruction, plant operation and maintenance expense bears no particular relationship to the geographically-based Instructional Unit Allotments, even though these costs are expected to be (and appear to be) strongly affected by severe climate and isolation.[7] An index comparison of costs for plant operations and maintenance and the Instructional Unit Allotments appears in Table 3.9. In most cases in the southeast and southcentral parts of the state, the Instructional Unit Allotments appear to be adequate (and more than adequate in some) to make up for the difference in expenditures per instructional unit on operation and maintenance, when compared to Anchorage. On the rural southwestern, northwestern, and Arctic coasts, and in the interior of the state, it appears that operations and maintenance expenditures

Table 3.7

Total Expenditures Per Instructional Unit,
Regular Instructional Expense Per Instructional Unit,
and Average Instructional Salaries, District Schools, 1975-76

District	Total Expenditures Per Instructional Unit as a Percent of Anchorage	Total Regular Instructional Expenditures as a Percent of Anchorage	Average Instructional Salary as a Percent of Anchorage
Anchorage	100.0	100.0	100.0
Bristol Bay	105.6	79.6	90.7
Cordova	82.6	64.3	91.3
Craig	127.7	56.6	65.7
Dillingham	112.2	60.3	102.3
Fairbanks	99.9	86.1	99.6
Galena	97.9	69.6	89.3
Haines	95.9	90.8	86.6
Hoonah	102.6	78.0	81.8
Hydaburg	82.3	88.2	69.9
Juneau	85.4	69.5	80.9
Kake	84.5	81.6	88.1
Kenai	97.3	79.2	98.8
Ketchikan	96.4	101.8	96.2
King Cove	76.6	45.6	63.8
Klawock	77.3	67.8	81.0
Kodiak	90.5	73.2	101.3
Matanuska-Susitna	95.9	73.1	88.0
Nenana	110.0	64.5	88.0
Nome	88.4	108.5	103.0
North Slope	175.1	114.8	118.5
Pelican	73.1	83.9	88.1
Petersburg	81.5	75.2	93.6
Selawik	108.1	59.5	95.0
Sitka	89.7	94.2	96.5
Skagway	70.7	66.9	79.7
St. Marys	110.2	36.4	90.0
Unalaska	114.0	73.0	90.4
Valdez	81.9	66.2	94.7
Wrangell	71.9	69.4	85.0
Yakutat	119.0	79.6	88.4

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table 3.8

Average Instructional Salaries and Certified Salaries Expense Compared to "Cost of Living" indicators, District Schools, 1975-76

Place	Average Instructional Salary	Average Instructional Salary as a % of Anchorage	Certified Salaries Expenditure/ Instructional Unit[1]	Certified Salaries Expenditure/ Instructional Unit as a % of Anchorage	Instructional Unit Allotment as a % of Anchorage	Total Consumption Cost Index
Anchorage	$20,556	100.0	$14,355	100.0	100.00	100.0
Bristol Bay	18,642	90.7	12,768	88.9	132.56[2]	--
Cordova	18,761	91.3	10,579	73.7	115.00	114.8
Craig	13,500	65.7	7,766	54.1	107.50	--
Dillingham	21,029	102.3	9,839	68.5	132.56[2]	160.0
Fairbanks	20,465	99.6	14,741	102.7	111.25	113.4
Galena	18,360	89.3	11,221	78.2	140.44[2]	155.0
Haines	17,793	86.6	14,451	100.7	107.50	108.2
Hoonah	16,820	81.8	10,996	76.6	107.50	--
Hydaburg	14,378	69.9	11,275	78.5	107.50	--
Juneau	16,637	80.9	11,771	82.0	100.00	100.2
Kake	18,107	88.1	12,916	90.0	107.50	--
Kenai	20,311	98.8	12,874	89.7	107.50	109.6
Ketchikan	19,766	96.2	11,320	78.9	100.00	101.0
King Cove	13,125	63.8	6,894	48.0	132.56[2]	--
Klawock	16,649	81.0	10,112	70.4	107.50	--
Kodiak	20,823	101.3	11,308	78.8	107.50	112.6
Mat-Su	18,089	88.0	12,044	83.9	103.75	104.0
Nenana	18,097	88.0	7,579	52.8	133.75	113.5
Nome	21,174	103.0	12,413	86.5	132.56[2]	167.5
North Slope	24,355	118.5	12,739	88.7	140.44[2]	166.3
Pelican	18,120	88.1	*	*	112.88[2]	--
Petersburg	19,236	93.6	12,519	87.2	103.75	--
Selawik	19,523	95.0	9,051	63.1	140.44[2]	--
Sitka	19,829	96.5	13,722	95.6	103.75	104.2
Skagway	16,383	79.7	11,618	80.9	107.50	--
St. Marys	18,508	90.0	5,723	39.9	136.50[2]	--
Unalaska	18,577	90.4	11,568	80.6	132.56[2]	--
Valdez	19,473	94.7	*	*	115.00	113.5
Wrangell	17,481	85.0	11,747	81.8	103.75	105.6
Yakutat	18,170	88.4	11,007	76.7	112.88[2]	118.9

[1] *Data not available

[2] Includes an additional 5 percent isolation factor since the district is not connected to Anchorage, Fairbanks, or Ketchikan by rail, highway, or Marine Highway System.

Sources: Alaska Department of Education; Table 2.10, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table 3.9

Plant Operation and Maintenance Expenses and Operation and Maintenance Employee Salaries and Benefits Compared to Instructional Unit Allotments

1975-76 School Year

Place	Total Plant Operation and Maintenance Expenditure/ Instructional Unit	Operations and Maintenance Salaries and Benefits/ Instructional Unit	Salaries and Benefits as a Percentage of Total	Total Operations and Maintenance per Instructional Unit as a Percentage of Anchorage	Salaries and Benefits Expenditure/Instructional Unit as a Percentage of Anchorage	Instructional Unit Allotment Index
Anchorage	$5,166	$4,229	81.9	100.0	100.0	100.00
Bristol Bay	7,433	2,047	27.5	143.9	48.4	132.56**
Cordova	4,220	1,878	44.5	81.7	44.4	115.00
Craig	3,728	1,072	28.8	72.2	25.3	107.50
Dillingham	6,899	1,351	19.6	133.5	31.9	132.56**
Fairbanks	7,103	4,367	61.5	137.5	103.3	111.25
Galena	5,558	1,893	34.1	107.6	44.8	140.44**
Haines	4,658	1,959	42.1	90.2	46.3	107.50
Hoonah	5,295	2,232	42.2	102.5	52.8	107.50
Hydaburg	3,765	1,632	43.3	72.9	38.6	107.50
Juneau	4,800	2,678	55.8	92.9	63.3	100.00
Kake	2,594	903	34.8	50.2	21.4	107.50
Kenai	4,029	2,199	54.6	78.0	52.0	107.50
Ketchikan	5,032	2,379	47.3	97.4	56.3	100.00
King Cove	4,128	1,869	45.3	79.9	44.2	132.56**
Klawock	4,588	1,210	26.4	88.8	28.6	107.50
Kodiak	4,840	2,146	44.3	93.7	50.7	107.50
Matanuska-Susitna	4,537	2,541	56.0	87.8	60.1	103.75
Nenana	6,215	2,077	33.4	120.3	49.1	133.75
Nome	10,140	3,138	30.9	196.3	74.2	132.56**
North Slope	19,427	7,628	39.3	376.1	180.4	140.44**
Pelican	3,834	*	*	74.2	*	112.88**
Petersburg	3,693	1,552	42.0	71.5	36.7	103.75
Selawik	8,962	2,450	27.3	173.5	57.9	140.44**
Sitka	4,193	2,281	54.4	81.2	53.9	103.75
Skagway	3,045	744	24.4	58.9	17.6	107.50
St. Marys	7,615	1,933	25.4	147.4	45.7	136.50**
Unalaska	7,061	2,519	35.7	136.7	59.6	132.56**
Valdez	4,699	*	*	91.0	*	115.00
Wrangell	2,853	1,217	42.7	55.2	28.8	103.75
Yakutat	5,521	2,705	49.0	106.9	64.0	112.88**

*Data not available

**Includes an additional 5 percent, since the district is not connected to Anchorage, Fairbanks, or Ketchikan by highway, railroad, or the Alaska State Ferry System.

Source: Alaska Department of Education , Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table 3.9 (continued)

REAA	Total Plant Operation and Maintenance Expenditure/ Instructional Unit	Operations and Maintenance Salaries and Benefits/ Instructional Unit	Salaries and Benefits as a Percentage of Total	Total Operations and Maintenance per Instructional Unit as a Percentage of Anchorage	Salaries and Benefits Expenditure/Instructional Unit as a Percentage of Anchorage	Instructional Unit Allotment Index
N.W. Arctic	$15,783	$5,343	33.9	305.5	126.3	140.44**
Bering Strait	29,694	7,552	25.4	574.8	178.6	132.56**
Lower Yukon	17,099	3,445	20.1	331.0	81.5	136.50**
Lower Kuskokwim	12,860	6,186	48.1	248.9	146.3	136.50**
Kuspuk	15,922	3,873	24.3	308.2	91.6	140.44**
S.W. Region Lake & Peninsula	7,961	3,561	44.7	154.1	84.2	132.56** 132.56**
Aleutian Chain Pribilof Islands	11,558	3,528	30.5	223.7	83.4	132.56** 132.56**
Adak	5,926	3,741	63.1	114.7	88.4	132.56**
Iditarod	9,072	3,000	33.1	175.6	70.9	140.44**
Yukon-Koyukuk	11,011	2,937	26.6	213.1	69.4	140.44**
Yukon Flats	16,539	6,350	38.4	320.2	150.2	140.44**
Upper Railbelt	8,987	4,346	48.4	174.0	102.8	133.75
Delta/Greely Alaska Gateway	7,332	2,537	34.6	141.9	60.0	111.25 111.25
Copper River	6,861	2,650	38.6	132.8	62.7	115.00
Annette Island	6,112	2,939	48.1	118.3	69.5	105.00**
Chatham S.E. Islands	5,074	2,252	44.4	98.2	53.3	107.50 105.00**
Chugach	7,983	2,425	30.4	46.9	57.3	115.00

**Includes an additional 5 percent, since the district is not connected to Anchorage, Fairbanks, or Ketchikan by highway, railroad, or the Alaska State Ferry System.

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

per instructional unit outstrip the Instructional Unit Allotment differential; and this is particularly true in the REAA's. For a wide variety of reasons, including (but not restricted to) isolation of facilities, climate, type of buildings inherited or constructed and their conditions, costs in the REAA's for plant operations and maintenance in 1975-76 were much higher than in most of the district schools. The detail of operational expenditures is not further analyzed here because the 1975-76 audit reports revealed that there may have been special arrangements for facilities use and utilities in many cases which preclude successful comparison of districts.[8] The largest component of operation and maintenance expense is salaries and benefits, which accounts for well over a third of the total in most cases (even where utilities prices are quite high), so it might be expected that plant operation and maintenance expenses would follow the Instructional Unit Allotments. That they do not is shown by the last three columns of Table 3.9. The salaries and benefits component forms a smaller part of the total plant operation and maintenance costs in the high utilities costs areas, as might be expected; however, the salaries and benefits paid per instructional unit is seemingly unrelated to the index of the Instructional Unit Allotment. Part of this index problem is caused by the unusual behavior of the Anchorage district, with its high wages and salaries payments, but the North Slope District and certain of the REAA's also exceed the differential. The reasons for the divergence of the salary index are not certain, but appear to be unrelated to geographic differentials.

Plant Operations and Maintenance vs.
Regular Instruction and Tax Effort

There is some coincidence between those districts which make an unusually large effort in the area of plant operations and maintenance, and a correspondingly small effort in the area of regular instruction; for example, Selawik and St. Marys spend far more on operations and maintenance per instructional unit than the average school district, but they spend correspondingly less (Appendix Table A.2) on regular instruction. These districts may be staying within their funds by sacrificing instruction.[9] Several of the REAA's may be in similar straits, since their spending on instruction, which could be expected to be far above average because of high costs of operations, does not exceed that in lower cost areas, implying a below-average real expenditure for instruction. None of the REAA's supply pupil support services, and many spend little on pupil transportation. In most of the REAA's, plant operations and maintenance expenditures are extraordinarily high, as are those for food service when it is provided. Certain of the district schools have been able to maintain average to above-average expenditures on both regular instruction and operations and maintenance, but this is usually at the expense of a relatively large local tax effort, as in Anchorage, the North Slope, and Unalaska (Table 3.5).[10] The inference can be drawn from this more detailed analysis that all components of cost do not behave the same way with respect to the geographic divisions of the state, and that treating each functional

component of cost identically in the Foundation Program may force school districts and REAA's to reduce certain controllable parts of their programs in order to compensate for parts which may not be under their control, in order to stay within the bounds set by the Foundation Program and local funding.

Summary

To summarize, the Instructional Unit Allotments at least covered the difference in total operating expenditures per instructional unit in 42 out of 48 school districts and REAA groups in 1975-76. However, one interpretation of the low correlation coefficient between the index of total operating expenditures per instructional unit and the Instructional Unit Allotment Index is that "costs of school operations" are not related to "costs of living," as defined by the current index. Some districts spend local funds at rates far above the statewide average; however, it is not possible, given the data, to tell whether this occurs because of inadequacies in state funding, because of differences in program offering, or some other reason.

On a more detailed level, this chapter examined whether regular instruction and operation and maintenance expenditures are related to "cost of living," as defined by the Instructional Unit Allotment Index. Again, the index of expenditures per instructional unit for regular instruction was seemingly unrelated to the "cost of living"

even though salary differences do explain much of the difference in expenditures for regular instruction. Salary differences turned out to be unrelated to the "cost of living." The operation and maintenance expenditures differences for rural Alaska were even larger than the "cost-of-living" differences, as measured by the current index. There is also some evidence that operation and maintenance expenditures are negatively related to regular instruction expenditures and positively related to local revenue efforts in at least some cases, suggesting that in places with high costs for plant operation and maintenance, schools tend to economize on regular instruction or communities have to make an extraordinary tax effort, or both.

Chapter 3

Footnotes

1. Regional Education Attendance Areas (the Alaska Unorganized Borough School District or AUBSD in 1975-76).

2. Funds for expenditures shown in this chapter and the appendices came from the School Operating Fund, plus all state and federal special funds grants and local sources. While it can be argued that "once-only" grants might cause expenditures to be too high for some districts for the year 1975-76 compared with "normal" experience, we decided not to attempt to determine which grants were part of "normal" financing and which ones were "exceptions." A more definitive set of conclusions would come out of averaging 3 to 5 years' experience with the current program; however, we have only 1975-76 available as a year using the current Instructional Unit Allotments. Also, in 1975-76, the AUBSD (REAA) regional schools were not necessarily funded using the allotments, although the total amount for the AUBSD schools was. Therefore, expenditure figures shown in this chapter and findings based on those figures should be viewed with caution.

3. The simple correlation coefficient between the index of total expenditures per ADM and the Instructional Unit Allotment Index is about 0.72, apparently indicating that "cost of living" and "expenditures per student" are strongly related. The coefficient is also statistically significant at the 5 percent level. However, the coefficient of determination, which measures the percentage variation in total expenditures per student "explained" by variation in the Instructional Unit Allotment Index is only about 0.50, indicating 50 percent of variation in expenditures per student is explained by other factors uncorrelated with the Instructional Unit Allotments. Also, high cost of living is correlated with small size. See footnote 5 for results after the adjustments for size of enrollment are made.

4. Alaska Statutes 14.17.250(18).

5. Statistical regression procedures show that the correlation coefficient is only 0.47 between the two indices, indicating they move together only about 50 percent of the time. The coefficient of determination is only 0.19, indicating that "cost of living" only accounts for about 19 percent of total variation in expenditures per instructional unit. The correlation coefficient is significantly different from zero at a significance level of five percent.

6. The correlation coefficient between the index of average instructional salaries and the Instructional Unit Allotment Index is only 0.23, while the percentage of variation in average salaries explained by differences in the Instructional Unit Allotment Index is only about 2 percent.

7. The correlation coefficient is 0.64, but the coefficient of determination still shows only around 40 percent of total variance in plant operations and maintenance expenditures per instructional unit is explained by variation in the Instructional Unit Allotments.

8. It is particularly difficult to make comparisons where the school is also an evening social center, or where housing provided for the instructional staff is carried on the books as part of operations and maintenance rather than as instructional expense. It was impossible to separate these sources of difference in the figures. Utilities costs were often important, but they could not always be separated into heating fuel, electricity, and "other." (See Table A.5) The price and terms under which electricity in particular is sold to schools is also very susceptible to local arrangement.

9. It is difficult to say that this happens in more than a few cases, however. There is a small and positive (0.38) statistically significant correlation between spending on regular instruction and expenditures on operations and maintenance, whereas one would expect it to be negative if a tradeoff were occurring everywhere. However, the problem could still exist for high maintenance cost districts, as long as they as a group still spent more than the average district for regular instruction.

10. Again, this may be just a few cases. While there is a slight (0.24) positive correlation between local revenue per unit of full value and plant operations and maintenance costs per instructional unit, as expected, the equation explains only two percent of variance in local tax effort, and the correlation coefficient is not statistically significant at the five percent level.

CHAPTER 4

Summary of Findings and Conclusions

Based upon the results of this study, it is possible to draw a set of simple conclusions regarding future courses of action related to the Public School Foundation Program and the use of regional "cost of living" indices to adjust for regional differences in cost of operations. The study findings point to three general levels of changes or alternative courses of action which could improve the Foundation Program's ability to deal with district-to-district differences in cost of operating schools. These are:

1. Even if there are no other changes in the Foundation Program funding scheme, the present Instructional Unit Allotments could be changed to more accurately reflect interregional differences in the "cost of living."
2. At a more basic level, the schedules used for computing instructional units could be revised to better reflect the place-to-place differences in components of cost not necessarily associated with differences in the "cost-of-living."
3. At the most basic level, given additional work, it appears possible to directly compute place-to-place differences in unit operations costs for comparable

programs of education,

These three courses of action will be discussed in the section entitled Alternative Approaches To Problems, following the summary of findings presented in the next section. Each will be related to the study findings, and some possible advantages and disadvantages will be given for each. The Summary of Findings subsection immediately follows this introduction. It is organized with respect to the three general subject areas of this report: History of Instructional Unit Allotments, Comparison of Cost of Living Indicators to Instructional Unit Allotments, and Comparison of Operating Expenses to Instructional Unit Allotments. Each finding is accompanied by a brief summary of the discussion presented in the relevant chapter.

Findings: History of Instructional Unit Allotments

1. The brief history of state funding of local school operations costs contained in Chapter 1 indicates that Alaskan legislatures and their advisors have consistently felt that some form of regional differential was necessary to adjust for cost differences between regions. This was originally applied only to teachers' salaries; but subsequently it was applied to other expenditures after the abandonment of the old reimbursement program and the establishment of the Foundation Program. These differentials have

been tied explicitly to location and have been treated separately from cost differences arising out of special cost characteristics of some programs and economies of scale achieved by larger districts.

2. The evolution of the idea of paying regional differentials has been in the direction of paying greater differentials, and of taking into account a wider diversity of local differences between locations. However, there has been confusion in the law and in administrative regulations between the concepts of place-to-place differences in unit costs of school operations and place-to-place differences in costs of living. The result has been that regional differentials in the law have been based on cost of living differences, which may be only tenuously related to place-to-place differences in costs of operations.

3. It is apparent from statements of intent and language in the law that legislatures have consistently attempted to provide most funds to school districts for "basic education," presumably distinguishable from less basic or optional education. However, the difficulty in making this distinction work has resulted in strenuous attempts to circumvent the problem, the latest of which is to bypass any attempt to define a "basic need" in terms of facilities and staff or in terms of program. Instead, "basic need" is defined as the number of instructional units allowed by formula, times the instructional unit allotment (in the sense of the regional differential times a base dollar allotment). Since the legislature sets

the base allotment, "basic need" or "basic education" is operationally defined as whatever the legislature decides to fund. The resulting program is a peculiar proxy for funding a basic program, adjusted for scale economies and interregional differences in operating costs. The inability to workably define basic need or basic education is inextricably linked to the use of "cost of living" instead of a cost of education index as the adjustment for regional variations in operating costs.

4. In establishing the Foundation Program, and in revising it from time to time, some ideas have been discarded which have apparent potential for solving some of the current problems faced by school districts. One example of such an idea was to provide state matching funds for school districts which made a tax effort above that required by the state in the Foundation Program. This would go some distance toward reducing the differential effect of taxable wealth on the ability of school districts to supply education funds from local sources. By tying aid per ADM or aid per instructional unit to revenue produced per dollar of taxable property, for example, rather than taxable wealth per student, the supplemental formula would produce more dollars, not in those districts which can raise large amounts per student with little impact on the tax base, but in those districts with small tax bases which must make large efforts to

generate the equivalent revenue per student. Another discarded idea which appears to have some merit was the 1962-1969 practice of compensating districts on different schedules for separate contributing factors to their costs. While the system is complex, and may have been discarded for that reason, it has the advantage that it could adjust more accurately for those portions of cost, particularly plant operation and maintenance and administration, which may be a function more of the age, size, and relative geographic dispersal of individual school buildings than of school district enrollment.

Findings: Cost of Living

With respect to cost of living, Chapter 2 introduces four major findings: 1) that virtually all recent cost of living studies in Alaska appear to answer the wrong question and, therefore, result in an irrelevant or unclear index for use in comparing cost of living between locations in Alaska; 2) that the most appropriate means of comparison is a budget study which measures differences in prices but not tastes or income; 3) that since such studies do not exist for Alaska, indices must be compiled from fragmentary data concerning the individual components of a well-researched budget adapted to Alaska, and combined into a plausible total consumption

index; 4) and finally, that in comparison with such an index, the current regional differentials appear to inadequately reflect the probable true differences in cost of living.

For the purpose of measuring the difference in cost of providing an equivalent standard of living or level of educational services in two locations, which is the apparent purpose of using the Instructional Unit Allotments, the ideal index would hold the standard of living constant and measure the difference in cost of the cheapest bundle of goods and services in each location which would provide that standard of living. As a second best solution, the cost of a given bundle of goods and services which provides a given standard of living at one location can be obtained for the second location, measuring the difference in prices between the locations, if not the minimum difference in the cost of living. However, existing indices do neither. The Cooperative Extension Service food market basket index can be used to indicate whether the cost of a given group of food items is different between two locations, but when this kind of index is arbitrarily averaged with relative total food and housing expenditure information of the type produced by the Division of Personnel and Labor Relations' periodic surveys, as is apparently done for setting the Instructional Unit Allotments, the result has an unclear relationship to the "cost of living." The direct use of expenditure data of the most recent Personnel and Labor Relations study is not appropriate in

the present context either since that information only could be used to show the cost of maintaining different standards of living in different urban and rural locations.

The most appropriate usable measure of the difference in cost of a fixed or equivalent standard of living is to take a given bundle of goods and services which are known to produce a given standard and price them at different locations. This is what is done by the Bureau of Labor Statistics for Anchorage and several other U.S. cities, but equivalent information is not available for other places in Alaska. As a proxy, this study develops price indices for several bundles of commodities which are representative of consumption patterns in Alaska. These are assumed to provide equivalent standards of living wherever consumed, and they correspond to the major categories of consumption in the BLS intermediate income budget. Once the cost indices are determined for each individual component of the budget, weights are assigned to each cost index which are equal to the proportion of total consumption each component represents in the BLS Anchorage intermediate income budget. The resulting weighted cost index represents in a general way the relative cost of maintaining an Anchorage moderate standard of living or its equivalent at several locations in Alaska. This index is designed mainly to measure price differences, not differences of tastes and income, which are appropriately held constant.

In comparison with the costs of maintaining a constant standard of living in several locations, the "cost of living" adjustment represented by the Instructional Unit Allotments shows much lower costs in most rural areas of the state. This is probably because the current adjustment does not reflect the fact of lower real incomes in most rural areas, and lower standards of living in housing, for example. Since the current index does not adjust for differences in standards of living, it is not appropriate to use this index to fund programs which are supposed to have equivalent levels of funding in each community, when costs of living are taken into account. The index created for this report, while imperfect, comes much closer to meeting that standard.

Findings: Relative Expenditures and Instructional Unit Allotments

There are five findings in Chapter 3 with respect to actual expenditures which are worth repeating in this summary. Some of these were observations concerning the expenditures themselves; others came from comparing actual expenditures for the 1975-76 school year with the Instructional Unit Allotments. The findings are: 1) that it was not possible, given the data, to show whether place-to-place differences in costs of educational programs arise from differences in unit costs of education or differences in programs; 2) that the schedule used to compute instructional units for ADM has more impact on equalizing school funding than the cost of living adjustments; 3) that, taking into account the "economies of scale"

factors and "difference in program" factors contained in the schedule used to derive instructional units, there was no statistically significant correlation between actual expenditures per instructional unit and the current "cost of living" adjustment in the Foundation Program; 4) that there is no statistically significant relationship between average salaries and cost of living, as embodied in the current Instructional Unit Allotments; 5) finally, that differences in expenditures per instructional unit on plant operations and maintenance are typically higher in the more rural and northern parts of the state than are the corresponding differences in costs of living. These same places are usually characterized by lower salaries and expenditures on instruction, by high local taxes, or by both.

1. The problem of identifying the cause of differences in costs of programs makes direct comparison of historic unit cost of operations by place impossible, since a "bare bones" program in an expensive location might cost the same as a more elaborate offering at an inexpensive location. The only cost comparison available is for those programs actually offered, and there is no current opportunity to compare the unit costs of a "bare bones" program between places with the "costs of living" between places, to see to what extent the current "cost of living" index diverges from a true "cost of operations" index.

2. Comparing each school's actual expenditures per ADM on an index scale for the 1975-76 school year with Anchorage equal to 100, and doing the same for expenditures per instructional unit, we found that the influence of the schedule of instructional units (and the power of the Commissioner of Education to determine the method of calculating instructional units for isolated schools) had more influence on relative amounts of funds received and spent than did the instructional unit allotments. While beyond the scope of this study, an investigation into the history and effect of this schedule appears at least as important as the current investigation of the Instructional Unit Allotments.

3. When both the economies of scale factors and the difference in program factors implicit in the instructional unit formula are taken into account in comparing unit total expenditures for education, the correlation between the Instructional Unit Allotment Index and expenditures per instructional unit is "small" and only explains 19 percent of variation in expenditures. The finding is difficult to interpret because there are several possible reasons for differences in expenditures per instructional unit (see paragraph 1, above); however, at several locations with high costs of living (and probably high costs of operations), expenditures per instructional unit are among the lowest in the state. In other cases, the 1975-76 expenditures per instructional unit far outstripped the cost of living adjustment. One possible interpretation of the finding of low correlation is that relative costs of operation are not related to

relative costs of living by location, as defined by the current Instructional Unit Allotment Index.

4. As a partial test of the proposition that costs of operation are not related to the cost of living, the correlation was computed between average instructional salaries, which represent a very high proportion of total operating costs, and the cost of living as indicated by the Instructional Unit Allotments. Again, the correlation is very small, indicating that the actual salaries being paid bear little or no relationship to the supposed cost of living. Part of the explanation may lie in relatively high staff turnover and consequential low tenure of teachers in rural areas; however, whatever the explanation, the fact is that salaries are not explained by cost of living differences. As a matter of fact, they are lower in many places in high-cost rural Alaska.

5. Plant operation and maintenance seems to be a major contributing factor to the differences in expenditures per instructional unit. In many of those cases with high Instructional Unit Allotments, the plant operations and maintenance is higher. Also, in several of the district schools, the cases with high plant operations and maintenance expenditures, either regular instruction expenditures are low, or local revenue effort is high, or both. Plant operation and maintenance costs appear to have different characteristics than both costs of living and other costs of operation, and this is not provided for in the Foundation formulas. Also, judging from the relationship

between regular instruction, plant operation and maintenance, and tax efforts, it may be that some high maintenance cost districts are having to make extraordinary tax efforts and reduce spending on instruction to stay within the budget. Certain REAA's also appear to be compensating for operation and maintenance costs by reducing spending on regular instruction.

Alternative Approaches to Problems Raised

Three major approaches to the problems raised in this study have been identified: 1. adjust the instructional unit allotments; 2. compute instructional units differently; and 3. develop a "cost of education" index. These correspond to successively fundamental levels of possible change in the Public School Foundation Program. At the most superficial level, the study finds that the Instructional Unit Allotments currently in use do not adequately reflect cost of living differences between locations in Alaska. Even if no other changes were made, making these cost of living adjustments more accurately reflect true cost of living differences would improve the Foundation Program by pointing out other features of the program which may need revision. Although subject to all the imperfections mentioned in Chapter 2, the total consumption expenditures index prepared for this study represents such an improvement.

Still more improvement in this index is possible, since the current index was prepared using a series of proxy variables, in

place of real budget studies for Alaskan locations which at the very least contain standards for diet and shelter, and which have a less arbitrary standard for transportation expenditures. Such budget studies are not currently done in Alaska, yet the Division of Personnel and Labor Relations has twice made an intensive effort to collect price and budget data in several locations. Small modifications of Personnel and Labor Relations' methodology could generate much-improved budget information, using the same collection mechanism and expending approximately the same effort. Primary needs in this area are: weighting the food prices properly; collecting a sample of housing expenditure information keyed to some minimum housing standards, and with random sampling less heavily weighted toward Anchorage, Fairbanks, and Juneau; and including in the questionnaire costs of transportation, household operations, and medical and personal care.

At a more fundamental level, the problems with perceived inequities in state school funding may not lie with the use of an incorrect cost of living or cost of operations adjustment to the base allotment. In particular, the data on 1975-76 expenditures on plant operations and maintenance seem to indicate that these expenditures do not follow the same pattern as expenditures on instruction, and may be influenced by different factors. The Foundation Program took this into consideration from 1962 until 1969 with a separate allocation for teaching units and for attendance centers. Without

getting involved in the issue of whether those earlier adjustments are the correct ones (there is no reason to suppose they are), it appears worthwhile to reconsider the concept of computing funding units on a double schedule which accumulates "regular instruction units" at a different rate than "operations and maintenance units."

At the most fundamental level, there must be recognition of the fact that the current formula is only a proxy for the most ideal solution, which is to do a real cost of education study, including a definition of "basic need" in terms of programs rather than dollars. The failure to define basic programs being funded means that the audited accounts of school districts show costs of a "basic program" in only the most general terms. To put it another way, the state knows what it is willing to pay, but it does not know what it is buying.

The State Department of Education may not want to dictate program offerings to the school districts and REAA's. It need not do so in order to fund the programs in a way which reflects relative operating costs. For example, there seems to be no reason why the state could not carefully reevaluate and recalibrate the formulas which convert ADM into instructional units in light of actual cost experience shown in the audited accounts over a multi-year period. Secondly, it is possible in principle to require each district, as a supplemental accounting requirement, to report the cost in local prices of a carefully-defined "basic

education market basket." The sole reason for such an exercise would be to establish the differences in relative cost of education in each district for use in the Instructional Unit Allotments, with the program otherwise unchanged.

Advantages and Disadvantages of Alternatives

There are several advantages and disadvantages to each alternative approach. The most obvious advantage of the first is that the initial revision of the Instructional Unit Allotments is not costly and can be redone periodically and more accurately at little additional cost to the state as long as periodic surveys of the cost of living are undertaken for other purposes. The primary disadvantage is that it does not get at the underlying reasons for costs of education being high or low in a given location and, therefore, may be grossly in error, no matter how great its persuasive value.

The second alternative requires an additional study but could use historical data and would not, therefore, require additional reporting from the school districts. It does not, however, get at the problem that cost of education and cost of living are not the same thing, so it cannot produce the best solution. It also is more expensive than the first alternative.

The primary advantage of the third alternative is that it would accurately show the cost of education differences between locations.

The primary disadvantage is that it requires another study and additional work and expense in reporting and auditing of school district and REAA expenses.

Conclusion

This study contains no recommendation for any of the alternative solutions. Whether any is adopted obviously depends upon a careful weighing of the cost of additional studies, the probability of success of those studies, and the expected changes each would make in the existing program if adopted. Each of the alternative solutions is stated in general terms: this was considered preferable to providing specific plans since it outlined the general lines of attack on the problems raised in this report most clearly.

In any case, some modification of this instructional unit allotment concept is necessary in order for the Public School Foundation Program to better achieve its purpose.

APPENDICES

Appendix A - Supplementary Tables

Appendix B - Bibliography

Appendix C - Related Correspondence

APPENDIX A

SUPPLEMENTARY TABLES

Table A.1

Detail of Expenditures Per ADM for School Districts and REAA's, 1975-76

District	Total Operations Expenditures per ADM	Total Regular Instructional Expenditures per ADM	Total Instruction and Instr. Support Expenditures per ADM	Total General Support Expenditures per ADM	Total Plant Operations & Maintenance Support per ADM	Total Pupil Support Services per ADM	Total Pupil Transport per ADM	Food Services per ADM	Total ADM
Anchorage	$2,123.2	$1,149.4	$1,397.7	$217.7	$292.0	$25.0	$114.8	$75.9	40,126.40
Bristol Bay	4,146.7	1,691.8	2,371.2	525.9	776.7	107.2	221.5	144.1	248.82
Cordova	2,705.1	1,140.1	1,901.4	288.9	367.9	46.8	28.0	72.0	550.54
Craig	4,775.3	1,146.5	3,400.6	609.0	371.1	171.1	100.3	123.4	150.70
Dillingham	3,985.4	1,160.4	2,596.4	600.0	652.3	0.0	136.7	0.0	412.47
Fairbanks	2,284.8	*	*	*	*	*	*	*	12,145.03
Galena	4,154.8	1,599.3	2,332.5	658.5	628.1	174.0	73.7	288.0	141.59
Haines	2,714.5	1,392.2	1,914.9	303.6	351.0	51.9	93.0	0.0	480.93
Hoonah	3,703.5	1,524.1	2,445.3	539.8	508.8	2.4	0.0	207.1	260.18
Hydaburg	3,008.9	1,746.0	2,448.0	0.0	366.5	0.4	0.0	194.0	113.00
Juneau	2,078.8	916.6	1,231.8	274.6	311.2	88.7	93.0	79.5	4,457.85
Kake	2,317.1	1,525.2	1,643.4	474.1	238.4	0.0	52.1	77.9	208.78
Kenai	2,586.4	*	*	*	*	*	*	*	5,046.08
Ketchikan	2,492.8	1,424.8	1,682.1	197.8	346.2	83.6	111.3	71.4	2,674.16
King Cove	3,449.3	1,111.5	2,233.2	654.1	495.0	0.0	6.4	60.6	116.75
Klawock	3,708.2	1,761.7	2,335.7	783.3	586.2	0.0	0.0	3.0	62.63
Kodiak	2,679.8	1,173.2	1,815.3	289.4	381.6	89.4	50.7	53.4	2,156.01
Matanuska-Susitna	2,599.5	1,073.5	1,555.5	300.2	327.5	54.0	256.4	106.0	3,008.79
Nenana	4,404.4	1,398.5	2,658.6	681.5	662.7	69.4	311.9	20.4	187.59
Nome	2,634.6	1,750.6	2,214.5	358.7	804.8	136.0	68.2	58.4	894.54
North Slope	6,308.0	2,239.4	2,808.2	1,128.8	1,863.6	58.1	105.4	343.9	1,073.73
Pelican	3,634.0	2,233.4	2,709.6	416.8	507.6	0.0	0.0	0.0	37.76
Petersburg	2,293.1	1,146.1	1,554.8	274.0	276.8	63.4	80.6	43.6	640.46
Selawik	4,279.2	1,274.8	2,270.0	716.5	944.4	14.2	0.0	333.9	199.28
Sitka	2,376.1	1,350.2	1,589.7	298.9	295.6	63.5	61.0	67.4	1,758.42
Skagway	2,324.0	1,190.4	1,644.6	327.8	266.4	85.1	0.0	0.0	217.21
St. Marys	5,127.5	917.6	3,022.2	737.7	943.4	0.0	0.0	424.2	113.00
Unalaska	4,963.4	1,720.4	3,097.0	590.6	818.5	27.7	357.2	72.3	120.77
Valdez	2,408.6	*	*	*	*	*	*	*	894.58
Wrangell	2,106.9	1,100.2	1,484.1	276.2	222.5	55.6	68.3	0.0	589.72
Yakutat	4,829.5	1,749.2	3,040.7	752.1	596.7	76.5	162.7	200.8	148.05

*Detail not classified

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table A.1 (continued)

REAA	Total Operations Expenditures per ADM	Total Regular Instructional Expenditures per ADM	Total Instruction and Instr. Support Expenditures per ADM	Total General Support Expenditures per ADM	Total Plant Operations & Maintenance Support per ADM	Total Pupil Support Services per ADM	Total Pupil Transport per ADM	Food Services per ADM	Total ADM
N.W. Arctic	$4,798.3	$1,682.8	$2,403.6	$316.3	$1,590.1	$ 0.0	$ 0.0	$488.3	595.53
Bering Strait	8,822.6	1,600.0	2,936.8	869.2	3,500.0	0.0	0.0	516.5	186.65
Lower Yukon	5,079.1	2,303.3	2,778.1	112.8	1,921.7	0.0	0.0	266.4	231.35
Lower Kuskokwim	3,586.6	1,325.0	2,121.1	281.1	893.1	0.0	27.4	263.9	1,339.15
Kuspuk	5,863.5	1,933.0	3,031.6	643.1	1,807.1	0.0	0.0	381.7	264.32
S.W. Region Lake and Peninsula	4,488.2	1,683.5	2,684.9	282.8	1,015.3	0.0	11.8	493.4	854.63
Aleutian Chain Pribilof Islands	4,411.6	1,695.3	2,317.0	599.2	1,326.6	0.0	0.0	168.8	409.47
Adak	2,506.2	1,366.3	1,568.4	323.5	396.4	0.0	0.0	117.3	642.88
Iditarod	3,611.5	1,565.6	1,565.6	68.7	1,235.4	0.0	0.0	239.9	242.31
Yukon-Koyukuk	4,681.9	1,710.4	2,650.7	329.6	1,280.8	0.0	0.0	420.8	636.19
Yukon Flats	5,622.1	1,624.6	3,011.4	480.9	1,751.8	0.0	30.1	348.0	330.44
Upper Railbelt	4,119.7	1,675.6	2,163.9	557.1	907.4	0.0	231.1	260.3	346.68
Delta/Greely Alaska Gateway	3,087.5	1,411.1	1,786.2	240.3	666.3	0.0	209.2	185.6	1,155.44
Copper River	3,393.3	1,325.5	1,871.7	227.8	622.7	0.0	397.2	273.9	727.20
Annette Island	2,593.5	1,167.9	1,657.6	255.8	443.6	0.0	343.1	202.1	413.36
Chatham S.E. Islands	3,800.4	1,723.3	2,623.1	367.2	744.7	0.0	18.1	47.3	429.26
Chugach	3,667.9	2,533.1	2,748.8	49.4	783.3	0.0	0.0	86.4	71.34

155

156

Table A.2

Detail of Expenditures Per Instructional Unit for School Districts and REAA's, 1975-76

District	Total 1975-76 Expenditures/ Instructional Unit	Regular Instruction Expenses per Inst. Unit	Total Instruction & Instructional Support per Inst. Unit	General Support Expenditures per Inst. Unit	Operations & Maintenance Expenditures per Inst. Unit	Pupil Support Services Expenditures per Inst. Unit	Pupil Transport Service Expenditures per Inst. Unit	Food Services Expenditures per Inst. Uni
Anchorage	$37,564	$20,335	$24,729	$3,852	$5,166	$442	$2,032	$1,343
Bristol Bay	39,684	16,190	22,692	5,033	7,433	1,026	2,120	1,379
Cordova	31,027	13,077	21,809	3,314	4,220	536	322	826
Craig	47,976	11,519	34,164	6,118	3,728	1,719	1,007	1,240
Dillingham	42,150	12,272	27,459	6,345	6,899	0	1,446	0
Fairbanks	37,499	*	*	*	*	*	*	*
Galena	36,767	14,153	20,641	5,827	5,558	1,540	652	2,548
Haines	36,017	18,473	25,408	4,028	4,658	688	1,234	0
Hoonah	38,543	15,861	25,450	5,618	5,295	25	0	2,155
Hydaburg	30,910	17,936	25,147	0	3,765	4	0	1,993
Juneau	32,065	14,138	19,001	4,236	4,800	1,358	1,434	1,227
Kake	31,729	16,599	22,504	5,159	2,594	56	567	848
Kenai	36,557	*	*	*	*	*	*	*
Ketchikan	36,229	20,706	24,447	2,875	5,032	1,214	1,618	1,037
King Cove	28,765	9,269	18,622	5,455	4,128	0	54	506
Klawock	29,030	13,792	18,286	6,132	4,588	0	0	23
Kodiak	33,987	14,879	23,022	3,670	4,840	1,134	643	677
Matanuska-Susitna	36,007	14,870	21,546	4,159	4,537	747	3,551	1,468
Menana	41,309	13,116	24,935	6,392	6,215	651	2,925	191
Nome	45,870	22,057	27,901	4,519	10,140	1,714	859	736
North Slope	65,758	23,344	29,274	11,767	19,427	606	1,099	3,585
Pelican	27,444	*	*	*	*	*	*	*
Petersburg	30,597	15,292	20,745	3,656	3,693	845	1,075	582
Selawik	40,607	12,097	21,541	6,799	8,962	135	0	3,169
Sitka	33,696	19,147	22,544	4,238	4,193	901	865	956
Skagway	26,568	13,608	18,802	3,748	3,045	973	0	0
St. Marys	41,387	7,406	24,393	5,954	7,615	0	0	3,424
Unalaska	42,816	14,841	26,716	5,095	7,061	239	3,081	624
Valdez	30,781	*	*	*	*	*	*	*
Wrangell	27,011	14,105	19,026	3,541	2,853	713	877	0
Yakutat	44,688	16,185	28,135	6,960	5,521	708	1,506	1,858

*Detail not available

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table A.2 (continued)

REAA	Total 1975-76 Expenditures/ Instructional Unit	Regular Instruction Expenses per Inst. Unit	Total Instruction & Instructional Support per Inst. Unit	General Support Expenditures per Inst. Unit	Operations & Maintenance Expenditures per Inst. Unit	Pupil Support Services Expenditures per Inst. Unit	Pupil Transport Service Expenditures per Inst. Unit	Food Services Expenditures per Inst. Uni
N.W. Arctic	$47,626	$16,703	$23,857	$3,140	$15,783	$ 0	$ 0	$4,846
Bering Strait	66,367	13,575	24,916	7,374	29,694	0	0	4,382
Lower Yukon	45,194	20,495	24,720	1,004	17,099	0	0	2,371
Lower Kuskokwim	51,645	19,079	30,543	4,047	12,860	0	394	3,801
Kuspuk	51,661	17,031	26,710	5,666	15,922	0	0	3,363
S.W. Region Lake and Peninsula	35,190	13,200	21,051	2,217	7,961	0	92	3,868
Aleutian Chain Pribilof Islands	38,434	14,770	20,186	5,220	11,558	0	0	1,470
Adak	37,469	20,426	23,449	4,837	5,926	0	1,504	1,754
Iditarod	26,518	11,495	15,180	505	9,072	0	0	1,761
Yukon-Koyukuk	40,251	14,705	22,788	2,834	11,011	0	0	3,617
Yukon Flats	53,079	15,338	28,431	4,540	16,539	0	284	3,286
Upper Railbelt	40,806	16,597	21,433	5,518	8,987	0	2,289	2,578
Delta/Greely Alaska Gateway	33,976	15,528	19,656	2,644	7,332	0	2,302	2,042
Copper River	37,388	14,605	20,622	2,510	6,861	0	4,377	3,018
Annette Island	35,735	16,092	22,840	3,525	6,112	0	473	2,785
Chatham S.E. Islands	25,895	11,742	17,873	2,502	5,074	0	123	323
Chugach	37,381	25,877	28,014	503	7,983	0	0	881

Table A.3

Detail of Regular Instruction Expenditures
Per ADM, 1975-76

Place	Total	Certified Salaries	Classified Salaries	Certified & Classified Salaries & Employee Benefits	Purchased Services	Supplies, Texts, Equipment, Etc.
Anchorage	$1,149	*	*	*	*	*
Bristol Bay	1,692	$1,333	*	$1,456	$27	$210
Cordova	1,140	922	$45	1,058	8	73
Craig	1,146	772	95	946	50	150
Dillingham	1,160	931	71	1,095	0.2	66
Fairbanks	1,067	898	*	991	8	68
Galena	1,599	1,268	106	1,511	13	71
Haines	1,392	*	*	*	*	*
Hoonah	1,524	1,057	213	1,406	20	98
Hydaburg	1,746	*	*	*	*	*
Juneau	917	763	85	848	8	60
Kake	1,525	1,187	25	1,285	3	237
Kenai	1,139	911	32	1,031	4	105
Ketchikan	1,425	*	*	*	*	*
King Cove	1,112	827	15	987	11	114
Klawock	1,762	1,292	234	1,603	8	151
Kodiak	1,173	*	*	*	*	*
Matanuska-Susitna	1,074	870	37	989	5	80
Nenana	1,398	*	*	*	*	*
Nome	1,751	*	*	*	*	*
North Slope	2,233	1,222	447	1,834	122	283
Pelican	2,219	*	*	*	*	*
Petersburg	1,146	938	45	1,078	4	64
Selawik	1,275	954	38	1,084	19	171
Sitka	1,350	*	*	*	*	*
Skagway	1,190	1,016	*	1,102	*	88
St. Marys	918	709	19	796	3	119
Unalaska	1,720	1,341	50	1,513	30	177
Valdez	1,053	*	*	*	*	*
Wrangell	1,100	*	*	*	*	*
Yakutat	1,749	1,190	101	1,434	18	297

*Detail not available

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table A.4

Detail of Regular Instructional Expenditures
Per Instructional Unit, 1975-76

Place	Total	Certified Salaries	Classified Salaries	Certified & Classified Salaries & Employee Benefits	Purchased Services	Supplies, Texts, Equipment, Etc.
Anchorage	$20,335	*	*	*	*	*
Bristol Bay	16,190	$12,764	*	$13,935	$246	$2,010
Cordova	13,077	10,579	$512	12,140	97	839
Craig	11,519	7,766	960	9,506	498	1,515
Dillingham	12,272	9,839	746	11,572	3	697
Fairbanks	17,512	14,741	*	16,266	128	1,118
Galena	14,153	11,221	943	13,407	119	627
Haines	18,473	*	*	*	*	*
Hoonah	15,861	10,996	2,215	14,632	206	1,023
Hydaburg	17,936	*	*	*	*	*
Juneau	14,138	11,771	*	13,081	130	927
Kake	16,599	12,916	273	13,987	28	2,584
Kenai	16,100	12,874	449	14,570	51	1,480
Ketchikan	20,707	*	*	*	*	*
King Cove	9,269	6,894	129	8,230	90	949
Klawock	13,792	10,112	1,846	12,549	60	1,183
Kodiak	14,879	*	*	*	*	*
Matanuska-Susitna	14,870	12,044	511	13,696	69	1,105
Nenana	13,116	*	*	*	*	*
Nome	22,057	*	*	*	*	*
North Slope	23,344	12,739	4,661	19,124	1,274	2,946
Pelican	16,867	*	*	*	*	*
Petersburg	15,292	12,519	599	14,388	53	851
Selawik	12,097	9,051	364	10,289	184	1,624
Sitka	19,147	*	*	*	*	*
Skagway	13,608	11,618	*	12,600	*	1,008
St. Marys	7,406	5,723	152	6,427	21	958
Unalaska	14,841	11,568	430	13,055	262	1,525
Valdez	13,460	*	*	*	*	*
Wrangell	14,105	*	*	*	*	*
Yakutat	16,185	11,007	931	13,267	168	2,751

*Detail not available

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table A.5

Detail of Operations and Maintenance Costs
Per Instructional Unit, 1975-76

District	Total	Salaries and Benefits	Purchased Services	Utilities	Contracts Repair & Maintenance	Supplies, Media, Equipment, Other
Anchorage	$5,166	$4,229	$172	$ 29	$ 276	$ 461
Bristol Bay	7,433	2,047	488	2,275	1,212	1,411
Cordova	4,220	1,878	435	1,504	171	232
Craig	3,728	1,072	48	1,368	512	728
Dillingham	6,899	1,351	598	2,022	2,330	597
Fairbanks	7,103	4,367	574	1,463	420	279
Galena	5,558	1,893	479	2,632	63	492
Haines	4,659	1,959	319	1,769	94	517
Hoonah	5,295	2,232	831	875	369	988
Hydaburg	3,765	1,632	242	1,335	0	555
Juneau	4,800	2,678	110	1,203	170	640
Kake	2,594	903	749	676	111	156
Kenai	4,029	2,199	6	1,508	101	215
Ketchikan	5,032	2,379	0	1,545	0	1,109
King Cove	4,128	1,869	495	1,314	63	387
Klawock	4,588	1,210	0	1,485	1,189	705
Kodiak	4,840	2,146	331	1,677	63	624
Matanuska-Susitna	4,537	2,542	239	1,033	90	633
Nenana	6,215	2,077	743	2,249	341	805
Nome	10,140	3,138	852	4,501	911	737
North Slope	19,427	7,629	1,153	7,715	323	2,606
Pelican	3,834	*	*	*	*	*
Petersburg	3,693	1,552	436	1,151	191	363
Selawik	8,962	2,450	517	4,960	585	451
Sitka	4,193	2,281	0	1,284	120	508
Skagway	3,045	744	7	841	647	806
St. Marys	7,615	1,933	830	3,782	299	771
Unalaska	7,061	2,519	653	2,133	213	1,542
Valdez	4,699	*	*	*	*	*
Wrangell	2,853	1,217	243	630	507	256
Yakutat	5,521	2,705	0	1,838	184	795

*Data not available

Source: Alaska Department of Education, Alaska Unorganized Borough School District, Center for Northern Educational Research.

Table A.5 (continued)

REAA	Total	Salaries and Benefits	Purchased Services	Utilities	Contracts Repair & Maintenance	Supplies, Media, Equipment, Other
Northwest Arctic	$15,783	$5,343	$ 843	$6,950	$1,348	$1,298
Bering Straits	29,694	7,552	3,435	8,925	5,060	4,722
Lower Yukon	17,099	3,345	429	11,784	386	1,156
Lower Kuskokwim	12,860	6,186	1,006	4,168	191	1,308
Kuspuk	15,922	3,873	2,081	3,681	4,282	2,005
S.W. Region Lake & Peninsula	7,961	3,561	737	2,551	278	833
Aleutian Chain Pribilof Islands	11,558	3,528	1,199	2,523	987	3,320
Adak	5,926	3,741	339	886	441	519
Iditarod	9,072	3,000	796	4,083	123	1,068
Yukon-Koyukuk	11,011	2,937	511	6,275	677	611
Yukon Flats	16,539	6,350	1,242	6,810	684	1,454
Upper Railbelt	8,989	4,346	513	3,108	51	969
Delta/Greely Alaska Gateway	7,332	2,537	1,098	2,564	517	616
Copper River	6,861	2,650	1,243	2,477	211	280
Annette Island	6,112	2,939	768	1,881	201	324
Chatham S.E. Islands	5,074	2,252	1,152	1,313	32	326
Chugach	7,983	2,425	2,918	1,548	502	590

APPENDIX B

BIBLIOGRAPHY

Alaska. Department of Administration. Division of Personnel. Survey of Housing and Food Costs. Juneau, Alaska: Department of Administration, Division of Personnel, December, 1972.

Alaska. Department of Administration. Division of Personnel and Labor Relations. Survey of Housing and Food Costs. Juneau, Alaska: Alaska Department of Administration, November, 1976.

Alaska. Department of Commerce. Alaska Public Utilities Commission. Sixth Annual Report of the Alaska Public Utilities Commission for the Calendar Year Ended December 31, 1975. Juneau, Alaska: 1976.

Alaska. Department of Commerce and Economic Development. Division of Energy and Power Development. 1976 Rural Energy Survey. n.p.: Department of Commerce and Economic Development, 1977.

Alaska. Department of Community and Regional Affairs. Division of Community Planning. Regional Cost Indexes Alaska House Districts. [Juneau, Alaska]: February, 1974.

Alaska. Department of Community and Regional Affairs. Division of Local Government Assistance. Alaska Taxable 1975. Municipal Property Assessments and Full Value Determinations. Alaska Local Government, Vol. 15, no. 1, Juneau, Alaska: Department of Community and Regional Affairs, January, 1976.

Alaska. Department of Community and Regional Affairs. Division of Community Planning. Regional Cost Indices Alaska House Districts. Juneau, Alaska: Department of Community and Regional Affairs, February, 1974.

Alaska. Department of Community and Regional Affairs. "Summary of Administrative Changes." Juneau, Alaska: Department of Community and Regional Affairs, 1975 (mimeo).

Alaska. Department of Education. A Look Back and Ahead: Department of Education Annual Report for FY 1975-76. Prepared by Public Information and Publications, Department of Education. Juneau, Alaska: Department of Education, October, 1976.

Alaska. Department of Education. Annual Reports (Statistical) 1964-1965, 1963-1964, 1962-1963. Juneau, Alaska: Alaska Department of Education, June 30, 1967.

Alaska. Department of Education. 1965-66 Annual Report. Juneau, Alaska: Alaska Department of Education, December, 1966.

Alaska. Department of Education. 1966-1967 Annual Report. Juneau, Alaska: Alaska Department of Education, January 22, 1968.

Alaska. Department of Education. Annual Report 1967-1968. Prepared by the Research and Publications Office of the Department of Education, November, 1968. 2nd printing. Juneau, Alaska: Alaska Department of Education, June, 1969.

Alaska. Department of Education. 1968-1969 Annual Report, Statistical Section. Prepared by the Office of Public Information and Publications, Department of Education. Juneau, Alaska: Alaska Department of Education, December, 1969.

Alaska. Department of Education. Annual Report 1969-1970. Prepared by the Office of Public Information and Publications. Juneau, Alaska: Alaska Department of Education, December, 1970.

Alaska. Department of Education. Facts About the Alaska Department of Education. Annual Report 1970-71. Prepared by the Office of Publications and Printing, Department of Education. Juneau, Alaska: Alaska Department of Education, December 23, 1971.

Alaska. Department of Education. Annual Report 1971-72. Prepared by Office of Public Information and Publications, Department of Education. Juneau, Alaska: Alaska Department of Education, December, 1972.

Alaska. Department of Education. Annual Report 1972-73. Prepared by Office of Public Information and Publications. Juneau, Alaska: Alaska Department of Education, January, 1974.

Alaska. Department of Education. Annual Statistical Report 1973-74. Prepared by Office of Public Information and Publications, Department of Education. Juneau, Alaska: Alaska Department of Education, January, 1975.

Alaska. Department of Education. Annual Report--Statistics 1974-75. Prepared by Office of Public Information and Publications. Juneau, Alaska: Alaska Department of Education, January, 1976.

Alaska. Department of Education. Annual Statistical Report '75-'76. Juneau, Alaska: Alaska Department of Education (Draft), July, 1976.

Alaska. Department of Education. Final Report and Recommendations of the Advisory Council on State Financial Support to Public Schools. Juneau, Alaska: Alaska Department of Education, January, 1970.

Alaska. Department of Labor. Employment Security Division. Research and Analysis Section. Alaska 1970 Census Atlas. Population by Enumeration Districts. Juneau, Alaska: Alaska Department of Labor, n.d.

Alaska. Legislative Finance Division. A Brief Historical Review of Alaska's School Foundation Program. Prepared by Richard A. Guthrie. Juneau, Alaska: Legislative Finance Division, December 12, 1974 (mimeo).

Alaska. Office of the Commissioner of Education. Report of the Commissioner of Education for the Years Ending June 30, 1918, June 30, 1919, and June 30, 1920. Juneau, Alaska: Territory of Alaska Commissioner of Education, October 1, 1920.

Alaska. Office of the Commissioner of Education. Report of the Commissioner of Education for the Period June 30, 1920 to March 1, 1921. Juneau, Alaska: Territory of Alaska Office of the Commissioner of Education, March 1, 1921.

Alaska. Salary Schedule. [Juneau, Alaska]: May 16, 1976.

Alaska. Territorial Department of Education. Report of the Commissioner of Education for the School Years Ended June 30, 1921, and June 30, 1922. Juneau, Alaska: Territory of Alaska Department of Education, March 1, 1923.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1924. Juneau, Alaska: Territory of Alaska Department of Education, December 1, 1924.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1926. Juneau, Alaska: Territory of Alaska Department of Education, March 1, 1927.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1928. Juneau, Alaska: Territory of Alaska Department of Education, March 1, 1929.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1930. Juneau, Alaska: Territory of Alaska Department of Education, February 1, 1931.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1932. Juneau, Alaska: Territory of Alaska Department of Education, February 1, 1933.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1934. Juneau, Alaska: Territory of Alaska Department of Education, December 15, 1934.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1936. Juneau, Alaska: Territory of Alaska Department of Education, December 15, 1936.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1938. Juneau, Alaska: Territory of Alaska Department of Education, December 15, 1938.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1940. Juneau, Alaska: Territory of Alaska Department of Education, December 15, 1940.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1942. Juneau, Alaska: Territory of Alaska Department of Education, December, 1942.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1944. Juneau, Alaska: Territory of Alaska Department of Education, December, 1944.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1946. Juneau, Alaska: Territory of Alaska Department of Education, December, 1946.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1948. Juneau, Alaska: Territory of Alaska Department of Education, December 28, 1948.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1950. Juneau, Alaska: Territory of Alaska Department of Education, December 15, 1950.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1952. Juneau, Alaska: Territory of Alaska Department of Education, December 1, 1952.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1954. Juneau, Alaska: Territory of Alaska Department of Education, December 1, 1954.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1956. Juneau, Alaska: Territory of Alaska Department of Education, January 1, 1957.

Alaska. Territorial Department of Education. Report of the Commissioner of Education, School Biennium Ended June 30, 1958. Juneau, Alaska: Territory of Alaska Department of Education, November 1, 1958.

"Anchorage Metropolitan Area Consumer Price Index--July, 1976." News. U.S. Department of Labor. Office of Information. San Francisco, California. BLS 6-72. August 20, 1976.

Association of Alaska School Boards. Survey of School District Budgeted Revenues, Expenditures, and Employee Benefits 1975-76. Juneau, Alaska: Association of Alaska School Boards, 1976.

Chambers, Jay G. Education Cost Differentials: The Conceptual Framework and an Empirical Analysis For School Districts in the State of Missouri. Prepared for the Educational Finance Committee of the Governor's Conference on Education in the State of Missouri. Contract No. 22-76-08684, Education Commission of the States. Rochester, New York: n.p., n.d.

Coon, E. Dean, et al. School Finance in Alaska Report No. 1: An Overview of Current Issues, Sources and Distribution of Funds for Public Elementary and Secondary Education. Fairbanks, Alaska: University of Alaska, Center for Northern Educational Research, September, 1976.

Electric Power in Alaska, 1976-1995. A Report for the House Finance Committee, Second Session Ninth Legislature. Fairbanks, Alaska: University of Alaska. Institute of Social and Economic Research, August, 1976.

Fischer, Richard W. "Comparative Housing Cost Analysis." Alaska Review of Business and Economic Conditions 6(5): 1-16, November, 1969.

G. M. Von Furnstenberg, et al. "Tax Effects in Measures of Economic Well-Being." Monthly Labor Review 97: 45-50, November, 1974.

Lindman, Erick L., et al. A Foundation For Alaska's Public Schools: A Survey Report. Prepared for Alaska State Board of Education. Los Angeles, California: University of California, September, 1961.

Marsh, Charles F. Food Prices in Alaska with Supplemental Cost of Living Data...1960 to 1970. FP-1. Fairbanks, Alaska: University of Alaska, Cooperative Extension Service, March, 1971.

Marsh, Charles F. Quarterly Report on Alaska's Food Prices--June 1976. Fairbanks, Alaska: University of Alaska, Cooperative Extension Service, June, 1976.

Miller, Kent and Oliver Scott Goldsmith. Energy Consumption in Alaska. Estimate and Forecast. Prepared for Department of Commerce and Economic Development, Division of Energy and Power Development. Anchorage, Alaska: University of Alaska, Institute of Social and Economic Research. January, 1977 (mimeo).

Nome School District. Support for Revision of Area Differential as Set Forth in State Law to More Nearly Reflect the Actual Cost of Education. Compiled by Nome Public School District. Presented to the Center for Northern Educational Research. Fairbanks, Alaska, November 11-12, 1976 (mimeo).

Odden, Allan and Phillip E. Vincent. Analysis of the School Finance and Tax Structure of Missouri: Background Research of the Educational Finance Committee of the Governor's Conference on Education. Denver, Colorado: Education Commission of the States, October 15, 1976.

Robert R. Nathan Associates, Inc. The Cost of Living in Alaska and Federal Poverty Guidelines. A draft report prepared for RurAL CAP and the State of Alaska. Division of Community Services. Department of Community and Regional Affairs. Washington, D.C.: Robert R. Nathan Associates, Inc., June 30, 1976.

Robert R. Nathan Associates. 2(c) Report: Federal Programs and Alaska Natives. Contract No. 14-010001-1947, U.S. Department of the Interior. Portland, Oregon: U.S. Department of the Interior, n.d.

Sherwood, M. K. "Family Budgets and Geographic Differences in Price Levels." Monthly Labor Review 98: 8-15, April 1975.

Shiskin, J. "Updating the Consumer Price Index--An Overview." Monthly Labor Review 97: 3-19, June 1974.

Thomas, Monica E. Alaska Food Price Patterns. Bulletin 47. Fairbanks, Alaska: University of Alaska. School of Agriculture and Land Resources Management Agricultural Experiment Station, September 1976.

Tussing, Arlon R. and Monica E. Thomas. "Consumer Prices, Personal Income, and Earnings in Alaska." Alaska Review of Business and Economic Conditions. 11(3): 1-26, October 1974.

Tussing, Arlon R. and Monica Thomas. "Prices and Costs of Living in Urban Alaska." Alaska Review of Business and Economic Conditions. 8(3): 1-31, December 1971.

U.S. Department of Housing and Urban Development. San Francisco Regional Office. Selection of Utilities for Subsidized Housing in Region IX. A Region IX Handbook. San Francisco: U.S. Department of Housing and Urban Development. HPMC-FHA 4500.6 SF SUPP 1, December 1972.

U.S. Department of Housing and Urban Development. Office of Assistant Secretary for Housing Production and Mortgage Credit. "Low Rent Public Housing Prototype Cost Limits." Federal Register 41(112): Part 4, June 9, 1976.

U.S. Department of the Interior. Alaska Power Administration. Alaska Electric Power Statistics 1960-1975. 4th ed. [Juneau, Alaska]: July, 1976.

U.S. Department of Labor. Bureau of Labor Statistics. "BLS Revises Estimates for Urban Family Budgets and Comparative Indexes for Selected Urban Areas. Autumn 1975," USDL: 76-759 (mimeographed) n.p.: May 5, 1976.

U.S. Department of Labor. Bureau of Labor Statistics. "Consumer Prices." Chapter 10 in Handbook of Methods. BLS Bulletin 1711 revised 1972. Washington, D.C.: 1972.

U.S. Department of Labor. Bureau of Labor Statistics. The Consumer Price Index, a Short Description 1971. Washington, D.C.: 1971.

U.S. Department of Labor. Bureau of Labor Statistics. Three Standards of Living for An Urban Family of Four Persons, Spring 1967. Bulletin No. 1570-5. Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, n.d.

U.S. Department of Labor. Bureau of Labor Statistics. Relative Importance of Components in the Consumer Price Index, December 1974. Report 440. n.p.: U.S. Department of Labor, Bureau of Labor Statistics, n.d.

U.S. Department of Labor. Bureau of Labor Statistics. "The Consumer Price Index vs. Place-to-Place Differences." Washington, D.C.: Bureau of Labor Statistics (mimeographed), n.d.

APPENDIX C

RELATED CORRESPONDENCE

APPENDIX C

Related Correspondence

Preliminary Report to the
Department of Education

CORRECTED
2/16/77

UNIVERSITY OF ALASKA
FAIRBANKS, ALASKA 99701

February 9, 1977

Dr. Nathanial Cole
Deputy Commisioner
Department of Education
Pouch F
Juneau, Alaska 99811

Dear Nat:

I am enclosing with this letter copies of a composite cost of living index for Alaska, prepared pursuant to the Center for Northern Educational Research's (CNER) School Finance Study contract with the Department of Education. The index was developed by the Institute of Social and Economic Research under subcontract to CNER. It is an integral part of the report on instructional unit allotments which is now nearing completion. As developed for the report, the index displays the relationships of the various inter-regional costs and examines the relationship between the index and the instructional unit allotments now in use.

Although the composite index more accurately reflects the regional cost of living differences than the presently used index, it should not be regarded as a substitute for substantive adjustments of the current instructional unit allotments in the Public School Foundation Program. In the judgment of ISER and CNER staff members who are preparing the instructional unit allotment report, cost of living differences bear only a limited relationship to the costs of delivering educational services throughout the state.

As the draft copy of the report on instrutional unit allotments notes, several alternative approaches are available to the state to develop a valid cost of education index for Alaska.

A complete explanation of the method and data used to develop the composite index is presented in Chapter 2 of the report on instructional unit allotments. To fully understand the advantages and limitations of the composite index, we urge all potential users of the composite index to review Chapter 2, and preferably the entire report.

Use of the composite index to adjust the instructional unit allotments at this time should be undertaken with caution and viewed as a temporary expedient, rather than a solution to the problem of devising an index which reflects regional cost of education differences.

With all the limitations and warnings presented thus far, you may ask if we believe the composite index to be of any value at all. In answer to this we can say that:

1. The elements included in the composite index accurately present the data from the referenced reports or cost items assembled;

PLEASE REPLY BY AIRMAIL

2. The composite index represents <u>one way</u> to display existing inter-regional cost data;
3. The composite index is a substantially better measure of inter-regional cost of living differences than is the salary survey index used in establishing the current instructional unit allotment percentages.

Thus, if steps are taken to adjust the instructional unit allotments according to <u>better</u> cost of living data, we would agree than the enclosed composite index is better.

On the basis of our analyses, we urge the Department of Education to reexamine the current method of adjusting the regional cost differences and to initiate the development of an alternative cost of education index which could be updated annually.

Also included with this letter is a map showing locations of local education agencies and the instructional unit allotment for which each qualifies by virtue of location within specified election districts. This map will be a part of the report on instructional unit allotments which will be available later this month.

We were pleased at the favorable response which you and other Department of Education staff members gave to the draft copy of Chapter 2 of the report last Thursday, February 3. The comments and suggestions will be useful as we complete the report.

Sincerely,

Dean

E. Dean Coon
Assistant Director
Center for Northern
Educational Research
(907) 479-7143

EDC/rg

Encl.
cc: Lee Gorsuch
Director, ISER

PLEASE REPLY BY AIRMAIL

The referenced
Composite cost of living index
appears as Table 2.10 on
pages 64 - 67 of
this report

The relationship
between the index and
instructional unit allotments
now in use follows.

TABLE 1: A COMPARISON OF THE ALASKA DEPARTMENT OF EDUCATION'S INSTRUCTIONAL UNIT ALLOTMENT TO A COMPOSITE TOTAL CONSUMPTION INDEX BY ELECTION DISTRICT
(Anchorage = 100)

Election District (Districts or REAA Affected)	Current Instructional Unit Allotment (Without isolation factor or minimum percentage)	A Total Consumption Index Adjusted to Election Districts
1 (Craig, Hydaburg, Ketchikan, Klawock, Chatham, Annette Island)	100.00	100.0
2 (Kake, Petersburg, Wrangell)	103.75	105.0
3 (Sitka)	103.75	105.0
4 (Juneau, Southeast Islands)[2]	100.00	95.0
5 (Haines, Hoonah, Pelican, Skagway)	107.50	107.5
5 (Yakutat)[3]	107.50	115.0
6 (Cordova, Valdez, Copper River, Chugach)	115.00	112.0
7 (Matanuska-Susitna)	103.75	102.5
8 (Anchorage)	100.00	100.0
9 (Seward)[4]	107.50	(112.5)
10 (Kenai)	107.50	110.0
11 (Kodiak)	107.50	112.5
12 (King Cove, Unalaska, Aleutian Chain, Pribilof Islands, Adak)[5]	126.25	(152.5)
13 (Bristol Bay, Dillingham, Southwest Region, Lake and Peninsula)	126.25	(152.5)
14 (Lower Kuskokwim)	130.00	160.0
15 (Galena, Kuspuk, Iditarod Area, Yukon-Koyukuk)[6]	133.75	160.0
15 (Nenana, Upper Railbelt)[7]	133.75	115.0
16 (Fairbanks, Delta/Greely, Alaska Gateway)	111.25	112.5
16 (Yukon Flats)	133.75	137.5
17 (Nome, Northwest Arctic)[8]	133.75	155.0
17 (North Slope)[9]	133.75	160.0
18 (Bering Straits)[9]	126.25	155.0
19 (Lower Yukon)	130.00	160.0

TABLE 1: A COMPARISON OF THE ALASKA DEPARTMENT OF EDUCATION'S INSTRUCTIONAL UNIT ALLOTMENT TO A COMPOSITE TOTAL CONSUMPTION INDEX BY ELECTION DISTRICT
(Anchorage = 100)

Notes to Table 1

1. This index reflects consumption of food, housing, transportation, clothing, medical and personal care. It was derived in 2.5 percent increments from the average Composite Total Consumption Index for schools shown in Table 2. If adopted, the numbers would be used in the same way as the current Foundation Program regional indices: that is, for schools whose headquarters are more than 5 miles from railroad, highway, or ferry connection to Anchorage, Fairbanks, or Ketchikan, the index is multiplied by an additional 5 percent factor to determine the final allotment. The index should not be regarded as more accurate than ± 5 percent.

2. Juneau shows prices approximately 5 percent below those of Ketchikan, to the south. This is caused by lower food prices in July, 1976, which may be a statistical aberration. The index for Juneau is probably closer to 100.0.

3. Yakutat has a significantly higher cost-of-living than the rest of Election District 5, probably due to its greater isolation. It was therefore reported separately.

4. Seward is part of the Kenai-Cook Inlet Borough Schools, but has a slightly higher cost of living, comparable to Kodiak.

5. Not enough price information was available to compute an index for Election District 12. However, except for transportation, costs are similar to or below those for Dillingham. The number in brackets is that for Dillingham.

6. Election District 15 shows a wide variation in costs. McGrath is unusually high, while Nenana and Tanana are much lower. The number chosen reflects our best guess of the probable District average.

7. Nenana and the Upper Railbelt REAA are located on the Parks Highway, and have probable costs of living slightly higher than Fairbanks, but much lower than Election District 15 as a whole.

8. The Nome-Kotzebue area seems to be characterized by costs of living somewhat below some of the rural areas to the south and east. A good case could be made for increasing the allotment to Northwest Arctic, since the costs were computed for the regional center.

8. Index reflects costs of living at the regions' main towns, and may bias the index downward for the District as a whole.